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# DELAWARE STATE MEDICAL JOURNAL

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*Official Organ of the Medical Society of Delaware*

INCORPORATED 1789

VOLUME 22
NUMBER 1

JANUARY, 1950

Per Copy, 50c
Per Year, $4.00

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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*Ault, G. W. & Madigan, E. P.: Am. J. Surg., 77:352, 1949

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*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

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## THE HUMAN DENTITION

William F. Melson, D. D. S.*
Wilmington, Del.

About the fourth week in embryonic development the mouth and face structures begin to form. The outgrowths forming the jaws are mostly mesodermic connective tissue. The teeth themselves are ectodermic in origin and therefore are appendages of the skin, as are the hair and nails.

Actual tooth development begins about the sixth week of foetal life but only after the dental lamina are laid down on the crest of the jaws, These first cup-shaped proliferations are, of course, the primary teeth, twenty in number, their eruption being staggered in order to keep pace with the natural growth of the jaws.

The teeth are composed of three calcified substances: The enamel, hardest substance in the body; the dentine, the first component to calcify; and the cementum, forming the outer layer of the root.

The permanent dentition, consisting of 32 teeth and composed of the same substances, is divided into highly specialized groups for purposes most useful to the needs of man. The human teeth are much reduced in size and strength and are more or less rudimentary and much less specialized when compared with other vertebrates.

The primary functions of man's teeth are: 1. Incision—Cutting of food; 2. Mastication—Grinding of food; 3. Insalivation—Mixing of saliva with food; 4. Function of speech.

It is interesting to note that man has lost some of the functions which are still retained among the lower orders, viz.:

1. Prehension—Highly specialized canines for purposes of combat;
2. Sexual warfare—The male boars canines are well developed over the female, but the growth of his is checked by castration;
3. Tools—The beaver;
4. Cosmetic function—The lower anterior teeth of the lemur are used to dress and comb their fur.

It may be said that in man the teeth also have an esthetic function and through this function also have a function of sexual attraction.

The teeth of man are closely related in form and structure to those of the apes below him. Human teeth, in general, are degraded in form when compared with the carnivora and herbivora. The structural integrity of the teeth is much more deficient in civilized man than among savage races, although dental diseases are not unknown among the latter.

As the teeth of man are strong and well-made they approach Simian form and integrity; as they are defective and ill-formed they depart from it. The best dentures are those which have animal perfection of organization.

The reversions to lower forms often presented by the teeth of man are of peculiar interest and exhibit their descent and animal relationship in a remarkable degree. These reversions are not unexpected when you consider the rudimentary position of our teeth in comparison with the lower primates. Some instances of reversion are:

A. Typical mammalian dental formula is 44 teeth. Man has 32. Man has lost 12 teeth along the line, some of which reappear as so-called "supernumerary teeth", but in reality are due to atavism and are reversions.

B. The upper incisors may be scooped-shaped, like the shrews and some lemurs, or may have a cingulum on the base like the quadrumana.

C. The upper lateral is very erratic, and like the third molar seems to be on the road to extinction.

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Owing to the effects of civilization, the teeth of the higher classes of both the American and European peoples are often decayed, which is not so much the effect of a weakness of the structure of the teeth as it is the result of unnatural foods and habits.

The teeth are often uneven and crowded in the arches because of disuse and other constitutional diseases, including diseases of the nose and throat.

The closer the human family approaches the natural methods of life and the teeth are made to perform their normal functions, the more often do we find a better structure and arrangement of the dental organs.

902 *Delaware Avenue.*

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## PEDODONTIA

James C. Baker, D. D. S.,**
Wilmington, Del.

It was in the first World War that the dental profession and the public became cognizant of the poor dental health of our country because of the number of draft rejections due to poor oral hygiene. Up to this time the field of pedodontia was practised by few and the general practioner merely did emergency treatment on children, essentially extractions.

Between the two wars this phase of dentistry was studied and practised by many. Means for educating children were placed in the schools. Public Health Service tried to educate the parents and great strides were made. The importance of the first teeth was particularly emphasized, but again in World War II we were plagued by rejections because of poor mouth hygiene. So we are still far from our goal.

In the last war, carious teeth were restored where possible or extracted and replaced in rapid succession. There seemed to be no end, but hope for a little reprieve ran high in the Dental Corps at my camp when we were informed that the first of the eighteen year-old draftees had arrived. Our hope was short lived however, for we worked just as hard, if not harder, on the eighteen year-old recruits. It was then that I realized that something must be wrong in our approach to children's dental health problems, since a great many of our dental defects can be traced back to the first dentition. I believe that Public Health Service and other dentists obtained the same impression because there has been heightened interest in children's dentistry at post-war conventions, our journals are devoting more space to this phase of dentistry, and Public Health Service is trying, by means of radio, television, lectures and pamphlets, to educate the parents as to a child's diet and proper care of teeth. The results of this Public Health program can be demonstrated from the Harlem slum districts, where it was shown possible to stimulate 23% of the parents to seek private dental care for children whose school examination showed dental defects.

It seems to me that physicians, dentists, and parents can take a little warning in their approach to children's dental problems from this quotation of Luther Burbank: "If we had paid no more attention to our plants than we have to our children, we would now be living in a jungle of weeds."

In order to appreciate properly the problems of children's dentistry, we must understand the development of teeth and know a little about the exfoliation and eruption of the teeth in a child's mouth. The beginning of tooth development occurs on the 45th day of intra-uterine life. This is known at the "tooth band" stage and represents two semi-circular bands of epithelical tissue from which there is an invagination into the mesoderm in finger-like penetrations forming 10 lower and 10 upper tooth germs.

The next process is the enamel bud stage, which occurs about the 60th to 70th day and is actually a lateral expansion of these finger-like penetrations.

On the 70th to 75th day, the development of the enamel organ begins. The enamel bud becomes bell-shaped and the cells begin to assume a definite position, so that at this point there are four layers of cells, namely: external epithelium, stellate reticulum, stratum intermedium, internal epithelium.

The dentine also begins to form at this time. The stratum intermedium and the internal epithelium are the important layers. The internal epithelium becomes the amelioblastic cells from which the enamel is formed. The stratum intermedium transports calcium from the blood to the amelioblasts. This is the reason I like to see pregnant women supplementing their diet with calcium. It is needed at this time because, once the enamel is formed, there is, as yet, no known way of changing the cells. Enamel is almost a dead tissue, since it has no blood or nerve supply. Its nutritional requirements are met through the "dental lymph."

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On the 100th day the dental capsule is formed. This is a membrane developing around the enamel organ to form the alveolis, but there is then another epithelial involution from the original penetration. This forms the permanent tooth bud. The epithelial band between each enamel organ finally becomes fenestrated and atrophies isolating the tooth germs one from the other. Sometimes there are unatrophied remains from which develop pathological conditions, such as supernumberary teeth, accessory cusps, enamel nodules, and "true" germination.

At the fourth to the fifth month, calcification of the enamel and dentine begins with the central incisors and proceeds in fairly regular sequence in the adjacent teeth, the second deciduous molar beginning its formation at about six months. By birth, the crowns of the incisors and partial crowns of the remaining deciduous teeth are formed. Beginning of the calcification of the first permanent molar has also taken place.

At six months the lower central incisors erupt and there is further calcification of the crowns of the remaining deciduous teeth and the permanent central incisors and cuspid. The third and fourth years are the most important years, since this is the time when there are more teeth present in the mouth than at any other time in life. Actually, forty-eight teeth have developed or partly developed at this time. All of the deciduous teeth are developed and fully erupted and all of the permanent teeth excepting the third molar are in the process of calcification. Six years is another important stage since it marks the eruption of the first permanent molar. This is the most important tooth in the mouth, since it is the keystone of the arch.

At twelve years of age, all of the deciduous teeth have been exfoliated and all of the permanent teeth except the third molar have erupted and assumed their position in the dental arch. The third molar erupts any time from fifteen years of age upward, even to middle life. This is the usual schedule for tooth exfoliation and eruption but deviations from normal do occur.

In order to understand the problems of pedodontia one must know the functions of deciduous teeth. These are (1) aesthetics, (2) mastication, (3) development of arch, (4) guiding of permanent teeth into position, (5) phonetics. Knowing these functions, we are able to determine a prognosis of some abnormalities encountered, such as malocclusion, due to premature loss of deciduous teeth, particularly the second deciduous molar. The loss of this tooth usually causes mesial drifting of the first permanent molar if it has not erupted and is not in apposition with the opposing number. The abnormality resulting would be possible impaction of the second bicuspid (permanent tooth) or malalignment of this tooth. Sometimes we can use space maintainers but only if the first permanent molar is fully erupted. Malocclusion of this type can also affect the future health of the child by creating a peridontosis due to traumatic occlusion. Thumb sucking of the type in which a child presses his thumb or finger outward against the lingual surfaces of the anterior teeth can result in protrusion of these teeth or opening of the bite.

A difficult problem in dedodontia is the determination of saving a deciduous tooth versus extraction. The following situations are ones in which extractions are indicated;

1. Roots nearly all absorbed and permanent tooth ready to assume its position in the arch.
2. The permanent tooth has developed sufficiently to withstand the forces of occlusion or mastication and when the growth and development in that segment of the arch would be impeded by retention of the primary tooth.
3. Child is in poor health and resistance to infection is low.
4. Caries has penetrated the bifurcation of the roots.
5. A good gingival seat cannot be established or adequate cavity preparation cannot be developed.

6. Periopical abscess about the tooth which shows pathological root or bone destruction.

An interesting curve has been set up by the Public Health Service which shows that the average number of teeth treated increases from 3.5 per child at the age of 2 years, to 6.8 teeth at the age of 7 and then fall to 5.1 at the age of 10 and increases thereafter.

Parents often ask at what age children should first be brought to the dentist and what pre-education should be given. It has been my experience that the best age to start dental visits is 3. During his first visit a child becomes familiar with the office and dentist. Usually no work is attempted but, depending upon the reaction of the child, an examination may be obtained. It is better if the parent does not try to educate the child as to a description of the dental office and work done there, but instead depicts the dentist as one who is going to help him keep his teeth healthy. The reason for this procedure is that invariably the parent in his description of the office or type of work done there inadvertently introduces a fear note into the child's mind. This is probably due to the fact that fear is associated in most peoples' minds with the dental office and thus the fear become communicated to the child.

*Mayfair Apartments.*

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## CARIES CONTROL

J. Draper Brown, D. D. S.,*
and
H. Harrison McAllister, D. D. S.**
Wilmington, Del.

The basis of the control of dental caries, as we know it today, dates back to the latter part of the 1800's when W. D. Miller[1] advanced the theory that caries result from the conversion of carbohydrate foodstuffs into acid by bacterial activity, and that decalcification is followed by proteolytic digestion of the organic substance.

Since that time much research has been conducted by various investigators, organizations, and institutions which substantiates this theory. The supporting evidence[2] is largely presumptive, because of inability to duplicate in the laboratory exact oral conditions. It is virtually impossible to control time, temperature, salivary composition, rate of salivary flow, substrate and bacterial flora outside of the oral cavity. However, research has indicated that caries may be prevented by eliminating the causes or increasing the resistance of the tooth. There are several generally accepted methods for controlling caries,[3] three of the more important of which are discussed here: (1) Minimizing carbohydrate content of the diet; (2) Increasing the resistance of the tooth to dissolution by acids; and (3) Inhibiting the activity of and destruction caused by acid producing bacteria.

### Minimizing Carbohydrate Content Of The Diet

Studies conducted by various groups have demonstrated reduced caries activity following a reduction of carbohydrates in the diet. Koehne, Bunting and Morrell,[4] in a study conducted at the University of Michigan Hospital on children ranging in age from 6 to 13 years, with normal metabolism and complete dietary control, showed that when the carbohydrate intake was high the Lactobacillus acidophilus count was high and the incidence of caries was high. They demonstrated, over a period of months, that with the lowered carbohydrate intake there was a lowered Lactobacillus acidophilus count and a correspondingly lowered incidence of caries. An important finding made in these and other experiments was that persons with an immunity to caries also have a resistance to the elevation of the number of oral lactobacilli.

Waugh[5] reported studies of native Eskimo children with teeth free from caries, who, when fed some form of refined carbohydrates developed cavities on the occlusal surface of molars within five or six weeks.

In studies made by Morgan[6] and his associates and Shour and Maury,[7] subjects suffering from severe malnutrition were found to have a lower incidence of caries when compared to peoples of well-fed countries. It was concluded that this lack of caries was due to the absence of refined carbohydrates in the diet.

### Increasing the Resistance of the Tooth

Reports by various investigators have shown that the resistance of the tooth may be increased by the use of chemicals. Thus far

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the application of 2 per cent solution of sodium fluoride to the teeth of children has proven to be forty percent effective over all in the reduction of caries. This is recommended at the ages of 3, 7, 11 and 13 so as to treat the greatest number of teeth as soon after eruption as possible.

Fluorination of water supply, 1 part per million, is still in the experimental stage and only preliminary reports are available as yet. The ingestion of fluorine in the form of tablets has not proven satisfactory.

The Gottlieb[8] impregnation technique, using potassium ferrocyanide and zinc chloride, which is reported to be as effective on adults as on children, has not been accepted generally because in preliminary reports there had been insufficient controlled experimentation.

## Inhibiting the Activity of and Destruction Caused by Acid Producing Bacteria

It has been established that a pH of 5.4 is required to decalcify enamel in an artificial medium buffered similarly to saliva[9] and has been called the critical index of caries. Stephan[10] developed a technique for measuring, with a high degree of accuracy, the pH of the plaque material on tooth surfaces. When caries-susceptible mouths are rinsed with a glucose solution, the pH of the plaque material rapidly falls below the critical index and remains there from 10 to 20 minutes. When individuals who were resistant to caries were tested in a similar manner, no appreciable change in pH was noted. The saliva of patients relatively free from caries had the highest buffering capacity in contrast to patients with either moderate or rampant caries. In saliva, the ability to neutralize acid is its content of urea, which is changed by aciduric bacteria into ammonium bicarbonate. Stephan and Miller[11] utilizing these facts had their patients rinse with a urea solution 10 minutes before the glucose rinse and found that at no time were the patients within the critical index of caries. Other workers[13] studied the effect of synthetic organic detergents on the metabolism of oral lactobacilli and found them to have an inhibitory effect. Jay and Esser[12] showed that killing lactobacilli by bactericidal means is not an effective method of lowering the lactobacilli for any appreciable period of time, or of preventing caries. However, it is possible to render aciduric bacteria incapable of producing acid of sufficient strength to cause decay in the carbohydrate debris of the mouth by the use of urea and a detergent.

Goodfriend[3] also reports remarkable success in the reduction of the caries rate of patients undergoing complex dentistry over an extended period of time by the use of a synthetic organic detergent and urea as a rinse immediately after eating and after brushing.

Summarizing, the present trend in caries control is to insist upon a low intake of carbohydrates, proper oral hygiene, the use of sodium fluoride in children, and the correction of abnormalities and the repair of any damage already present. The use of sodium fluoride in adults has not been shown to be effective. As yet, the new ammoniated dentifrices have not been accepted by the council on therapeutics of the A. D. A., because there has not been enough controlled reseach to substantiate the claims made by some of the manufacturers.

In conclusion, the following technique is recommended for the every-day control of dental caries.

1. Refined flour and sugar be eliminated from the diet so far as possible.

2. Good oral hygiene with emphasis placed on proper tooth brushing and home care, periodic prophylaxis, and examination, both clinically and roentgenographically.

3. Correction of abnormalities and any damage present by restorative means.

4. The use of topical application of 2% sodium fluoride in children.

5. In those patients with rampant caries, the above plus utilizing the caries control clinics of the dental schools, (Several of the dental schools have caries control clinics, to which samples of the patients saliva are sent at regular intervals, lactobacillus counts are done, and dietary recommendations made from these findings.)

6. Last, but not least, patient education and cooperation.

*Tenth and Madison Streets.*

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# PERIODONTIA IN EVERYDAY PRACTICE

Frank M. Hoopes, D. D. S.,*
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Periodontia is the study of the supporting structures of the teeth. It hasn't been too long ago that the chronic gum disease case was "pyorrhea" and the acute case was "Vincent's infection." All that is changed now. The study of periodontia as a specialty of dentistry dates from 1920 and from that time much has been done about the study of gum diseases.

In making a diagnosis now it is important that we consider the lips, buccal parieties, tongue, and floor of the mouth; also the palate, throat, teeth, and supporting structures. I am going to speak chiefly to-night of the teeth and soft tissues.

The irrational factors to be considered are inflammations due to calculus, which deposits around the gum margins of the teeth, many times causing tissue swelling, soreness, and some bleeding. Oftentimes such a syndrome may be mistaken for gum disease when actually all that is needed is a thorough prophylaxis. Other medication is not required and the mouth will return to normal with only such treatment.

Faulty dentistry often will cause trouble, such as bridges that fit poorly. Along that line of thought there are some teeth that should not be used as an anchorage for a bridge unless there is good bone formation around the tooth. Poor cavity margins can also be a contributing factor in periodontal disease.

The functional factors involved in periodontal disease are traumatic occlusion, i. e., where the teeth do not strike in the proper manner but cause an undue amount of stress on the teeth that strike each other prematurely. This can be corrected by the adjustment of the bite.

Bruxism is another functional factor that causes periodontal disease. This is caused by grinding of the teeth by the patient, usually during the sleeping hours. Very difficult to treat, appliances built for the patient to wear during the sleeping hours are not satisfactory. The cause of the disturbance is determined by quizzing the patient, and in extreme cases the aid of a psychiatrist is obtained.

Gum diseases go unnoticed for many years because they do not cause pain in their incipient stages and very rarely are fatal. In the blood dyscrasias, periodontal disease is quite pronounced. In the diabetic, the controlled case and especially the one that has been controlled early, does not generally present a dental problem other than routine prophylaxis, x-rays, and thorough periodic check-ups of the dental apparatus. The leukemias all offer important dental problems.

In cases where dilantin is being given the patient the oral manifestations are swelling, hyperplastic tissue completely covering the teeth in many cases. Surgery is contraindicated in these cases because the condition will recur in four to six months. Quite a bit of work has been done in treating the cases by conservative methods—namely, curettage over a period of four appointments, dietary control in having an extremely low carbohydrate diet. The preliminary reports on this method appear to have been quite successful and the patient continues taking the dilantin in the same dosage as before.

Necrotic gingival stomatitis or what we commonly call Vincent's infection or trench mouth, is recognized by the fetid odor of the breath, bleeding of gum tissues, swelling, ulceration of tissues and teeth. The causes may be nutritional deficiencies, lowered general body resistance, with a consequent lowering of gum tissue resistance, or by extreme emotional disturbances. We now know this disease is non infectious and non-contagious.

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In the treatment, a great amount of rest is required and is of the utmost importance. A light, nutritional diet is prescribed, nothing hard to chew, forced liquid feeding if need be; if the orange juice is too irritating, it may be diluted with water; no smoking, hourly irrigation of the teeth for the first twelve hours and then as often as possible. One of the best means of irrigation is to attach a shower hose attachment to the faucet and allow the water to run through and between the teeth. Five-hundred milligrams of vitamin C daily and twenty milligrams of riboflavin should be prescribed, caustics should not be used in the treatment of this disease. Sodium perborate is contra-indicated, because of its burning action on the tissues.

Treatment in the office. The mouth should be cleaned up, all dead tissue removed, using mild hydrogen peroxide (3%.) Thorough prophylaxis should be done. Of the antibiotics, penicillin is sometimes used by mouth and by injection. Penicillin troches do not work as well as they might and sometimes cause excessive irritation. Curettage is of great benefit. The aneline dyes are often effective. Penicillin alone is not the answer, as it will clear up the case only temporarily and it will be very apt to recur.

Cases of necrotic gingival stomatitis should be treated by the dentist, due to the fact that local treatment in the mouth is essential, including curettage and complete prophylaxis.
600 *W. 10th Street.*

## PRESENT CONCEPTION OF GOOD DENTISTRY

J. Paul Winthrop, D. D. S., F.A.C.D.*
Wilmington, Del.

In reviewing much of the dental curriculum tonight, for a group such as this and after having listened to the members of the dental staff explain somewhat in detail just what is going on in their respective fields of special interest, one is bound to conclude that great strides have been made by the profession as a whole over the past fifty years in placing this branch of the healing art on a very sound scientific foundation. The fact that we are assembled here together is evidence of our mutual interest in health, be it good or poor, and it seems quite obvious assurance that we believe we can solve these problems better with unified effort, with sympathetic understanding, and without bureaucratic assistance.

Dr. Melson, in a somewhat philosophical vein, has told you of the role played in the development of teeth by diet—foods are extremely important for the first eight years of a child's life. He has shown the importance heredity and disease play, what a fever can do, what a great debilitating illness can do, and he told you of the constant change being noted in the dental mechanism, almost tangible proof today of the theory of evolution. This latter fact is classically demonstrated in the frequently missing third molar of our twentieth-century children.

Dr. Baker has traced for you the development of the teeth of children, pointing out the necessity of furnishing abundant calcium to the pregnant woman by at least the 75th day of prenatal life. I'm certain we all know that the most assimilable form of calcium is found in milk and that of the other available compounds calcium gluconate and dicalcium phosphate are doubtless the best. One should not forget the importance of vitamin D in the assimilation of calcium. He has told you how important it is to keep the deciduous teeth in the mouth until the first permanent molors have interlocked, thus forming the foundation of the dental arch. Further important thoughts in this connection would include the need for maintaining a fully formed arch to prevent malocclusion. This does not say that deciduous teeth should not be extracted. There are several rules to guide us and I think all of us are agreed upon them. They are:

Extract deciduous teeth

1. When the child's general health is far below normal.
2. In the presence of rheumatic fever or rheumatic heart disease (with adequate preliminary medication).
3. Where heart lesions exist and bacterial

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*Attending Chief, Dentistry Division, Delaware Hospital. Read before Hospital Combined Staff Meeting December 10, 1949.

endocarditis might result from the infection. (Also with adequate preliminary medication.)

4. In young diabetics.

Parents need great and prolonged instruction still, today, in the recognition of the first permanent molor, of the necessity of keeping it in the mouth, and of having deciduous teeth filled. The entire future development of the child's face is completely contingent upon the contour of the dental arch. Moreover, continued efforts should be made by physicians and dentists alike to drive home the ill effects of lip habits, pillowing, finger-sucking, and the like, all of which are precursors of the case of orthodontia.

Dr. Hoopes has ably outlined some of the more common gingival pathological entities with which we are faced today. He has told you that all cases of mouth infection are not pyorrhea and I would like to add, as a means again of presenting it forcibly to your attention, that necrotic gingivitis or Vincent's infection or trench mouth, whatever you wish to call it, is a constantly recurring disease, once poor oral hygiene permits its onset. Injections of penicillin are specific for the organisms seen in the infection. But the underlying cause—the poor oral health— cannot be cured by penicillin. It takes scaling, the removal of calculus and necrotis debris, and it takes a lot of hard, tiring work to get the tissues back to normal. Acute infections will be aided immeasurably with penicillin given hypodermically—not nearly so well with lozenges or oral tablets—but the cure is affected by cleaning up the mouth. It is a dental problem, not a medical one. Dr. Hoopes has also told you of the great need patients have for certain vitamins and, to repeat, their especial needs to maintain gingival health are vitamin A, C, and B complex. He also conveyed to you the latest thought in relation to bruxism—the psychiatric approach.

Drs. McAllister and Brown discussed some of the important controls of caries, as we attempt to manage that problem today. We are certainly not agreed that the ammonia ion is the great answer to all of the unsolved problems. The American Dental Association does not give approval and the literature is very sparse, indeed, to prove its merits. Possibly the best evidence that urea (which produces the NH3 ion) is of advantage was contained in the paper by Dr. Goodfriend, previously cited, and over a period of eight years, with a prescribed mouth wash containing urea and sodium alkyl aryl sulfonate he was able to show improvement in one group over another of 75%. This was in private practice and reasonably well controlled. But—his patients used the wash religiously after meals. Do you know many patients that would rinse their mouth after every meal? Time will tell more about the ammonia ion.

We are fully convinced, on the basis of much work done throughout the country that fluorine will reduce dental caries, if properly applied at the proper ages, from 25% to 40%. Gottleib had advanced a theory of protecting the teeth against decay by impregnating them with potassium ferrocyanide and zinc chloride. This is a very dangerous chemical and, hence, few men have felt willing to venture far with its application as a routine measure. There is also little experimental proof to prove the claims of its followers.

I should like to add a word or two about some of the more common things of dentistry, and especially the condemnation by many people examining mouths of the gold crown. There are many very fine gold crowns today holding bridges and serving to provide masticatory surface where a tooth has been severely injured. X-ray evidence of disease should be the deciding factor in ordering them removed. The same is true of pulpless teeth. Unless the patient is suffering from disease, the cause of which cannot be determined, it seems a great pity to have pulpless teeth extracted, just because they are pulpless. If negative to radiographic examination, great thought should be given to the problem. There is little evidence to prove that all arthritis, for instance, is improved by the extraction of teeth. Of course, there are those who say take out all "dead teeth." Well! These pulpless teeth aren't dead! The tissues all around them are quite alive. And no artificial one can do the work of the non-vital one. It is a matter for common sense and consultation, rather than one of rule, when a decision is to be made in these matters.

There has been little change in the matter of repairing teeth in the past few years, with one exception. Within the past several months a new filling material for anterior teeth has been made available. It is a plastic and some of us who have used the material have found it to have many virtues. Especially, it is tolerant of mouth fluids and does not wash away. It is strong enough to withstand normal biting stress and is manufactured in a variety of shades to match tooth color. We have fond hopes that it will measure up to the claims made for it and evidence is rapidly accumulating that this will be true.

Gold inlays still represent the best way to restore posterior teeth and silver amalgam is still a satisfactory substitute and cheaper. Fixed bridges and removable bridges are both satisfactory and have their proper places in dentistry. It is not a matter of choice, necessarily, but a matter of selection of the proper place for either one. Two abutments, at least, are essential for the good fixed bridge. Vitallium, an alloy, is rapidly replacing gold for removable brigework. It is cheaper, just as strong, tissues tolerate it admirably, but it is a bit more difficult to repair. The porcelain jacket crown (baked porcelain) is the ideal for anterior teeth and bicuspids where extensive tooth structure is lost. It can be our most beautiful restoration.

As one of your chiefs, I wish to extend my thanks to the members of the staff for their invitation to our department to present this evening's program and I trust we have brought you some information which you can take along with you in your every-day practise.

604 *Medical Arts Building.*

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# BACILLARY DYSENTERY AND GASTRO-ENTERITIS

## Diagnosis and Treatment of 18 Cases*

E. G. Scott, M. T., ASCP,**
Wilmington, Del.

The enteric bacteria include a large number of gram-negative, non-sporulating rods whose natural habitat is most frequently the gastro-intestinal tract of man and animals. Some, e. g. the coliform bacilli, apparently live as saprophytes in the intestinal tract, but may cause pathologic processes in other parts of the body. Others however, are definitely pathogenic for man, and cause various types of enteric disease. Of these, *Salmonella typhosa* (typhoid fever), the gastro-intestinal salmonella and the shigella (bacillary dysentery) are by far the most important. This paper will report an unusually high incidence of enteric disease admitted to the hospital during 1949, the chief symptoms of these patients and the technics used in the isolation of the bacillary agents involved.

In the past year, eighteen patients with bacteriologically proven enteric disease have been admitted to the Delaware Hospital. Twelve of these ranged in age from 4 months to 9 years, and six from 24 to 70 years. The chief complaint of the majority of patients were fever, diarrhea and abdominal pain, with average symptom onset of 48 hours in the pediatric group, and 4 days in the adult group. The organisms isolated fell into three main groups, viz, 8 cases of bacillary dysentery due to *Shigella sonnei*, 7 cases of gastro-enteritis due to *Salmonella typhimurium*, *Salmonella oregon*, *Salmonella panama* and *Salmonella st. paul* and 3 cases of typhoid fever due to *Salmonella typhosa*. Several of the salmonella cases presented diagnostic problems, which were solved in large part by the bacteriological findings. It will be noted that 8 cases of shigella infection were diagnosed during the months of September and October, suggesting a possible epidemic pattern. However a survey of the homes represented indicated no particular area involved in these, or any of the other cases, excepting cases 10 and 12, who were sisters living in the same house. Sulfadiazine appeared to be the drug of choice in the treatment of bacillary dysentery, while chloromycetin proved effective in the salmonella and typhoid infections.

In the pediatric patient, sulfadiazine was given in a dosage of 1-1½ grains per pound per day for 5-7 days[1]; while chloromycetin[2] was generally administered in an adult dosage of 1-2 grams per day, continued for 5 days after normal temperatures were reached. There were no fatalities among the 18 cases, and no complications developed during hospitalization.

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*From the Medical and Pediatric Services of the Delaware Hospital.

**Bacteriologist, Department of Pathology, Delaware Hospital.

CHART

| Case | Age | Sex | Chief Complaint | Hospitalization | Bacteriology | Specific Therapy | Outcome | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | 8 | M | Fever, chills, diarrhea of 4 days | 1/12-2/12 | Sal. typhosa (blood & feces) | AM, SM, SD* | *Imp. | |
| 2 | 4 mo. | F | Fever, cough, loose stool of 1 day | 1/13-1/29 | Sal. oregon | SD | Imp. | |
| 3 | 23 mo. | F | Fever, cough, diarrhea, vomiting of 2 days | 9/2-9/25 | Sal. typhimurium | PN, AM, CM | Imp. | Carrier to 11/26 |
| 4 | 10 mo. | F | Fever, vomiting, diarrhea of 1 day | 9/12-9/18 | Sal. panama | PN, SD | Imp. | |
| 5 | 6 | F | Fever, diarrhea of 1 day | 9/23-10/1 | Sal. typhimurium | PN, CM | Imp. | |
| 6 | 17 mo. | F | Upper respiratory infection, fever, loose stool of 1 day | 9/26-10/9 | Sh. sonnei | PN, SD | Imp. | |
| 7 | 3 | M | Abdominal pain, diarrhea, listlessness of 6 days | 10/7-10/28 | Sh. sonnei (Asc. lumbr.) | SD, Hexylresorcinol | Imp. | |
| 8 | 18 mo. | M | Fever, convulsions, upper respiratory infection of 7 days | 10/15-10/24 | Sh. sonnei | PN | Imp. | 1st stool + on day of discharge |
| 9 | 9 | F | Abdominal pain, loose stools of 1 day | 10/18-11/2 | Sh. sonnei (Ent. vermic.) | SD | Imp. | Appendectomy on admiss. |
| 10 | 9 | F | Fever, loose stool, abdominal pain, headache of 1 day | 10/19-11/2 | Sh. sonnei | SD | Imp. | |
| 11 | 6 | F | Fever, diarrhea of 3 days | 10/29-11/9 | Sh. sonnei | PN, SD | Imp. | |
| 12 | 8 | F | Diarrhea of 2 days | 10/19-10/28 (OPD) | Sh. sonnei | SD | Imp. | Sister of Case 10 |
| 13 | 70 | M | Pain in leg and chest, fever | 6/2-7/21 | Sal. st. paul (blood) | PN, SM, AM | Imp. | Patient in Memorial Hospital |
| 14 | 52 | F | Chills and fever of 5 days | 7/27-8/24 | Sal. typhosa | CM | Imp. | |
| 15 | 50 | F | Fever, headache, delirium of 1 day | 8/15-9/2 | Sal. typhimurium | CM | Imp. | |
| 16 | 42 | F | Fever, chills, dysuria of 8 days | 9/9-9/17 | Sal. typhosa (blood) | Symptomatic | Imp. | Blood culture + on day of dis. |
| 17 | 33 | F | Abdominal pain, NVD of 4 days | 10/12-10/21 | Sh. sonnei | Symptomatic | Imp. | |
| 18 | 24 | M | Fever, abdominal pain, NVD of 4 days | 11/9-11/16 | Sal. typhimurium | Symptomatic | Imp. | |

*SD—Sulfadiazine
AM—Aureomycin
SM—Streptomycin
PN—Penicillin
CM—Chloromycetin
Imp.—Improved on Discharge

The bacteriological procedures used were as follows:

(a) Fecal specimens or rectal swabs were taken as soon as enteric infection was suspected, and promptly submitted to the bacteriological laboratory.

(b) On receipt of same, the material was streaked with a swab to one Difco SS agar plate, and the swab shaken out in 5 ml. Difco tetrathionate broth. Plate and broth are incubated at 37° C. overnight.

(c) On the following morning, the original SS agar plate was examined for non-lactose fermenting colonies, which if present, were streaked and stabbed to single tubes of BBL triple sugar iron agar slants. At the same time, a loopful of the well shaken tetrathionate broth was streaked to a second SS agar plate and an eosin methylene blue agar. All media were again incubated overnight at 37° C.

(d) On the next morning the triple sugar iron agar slants were examined, by appearance and odor, for typical reactions of the enteric pathogen group. Any suspected growths were slide agglutinated with Lederle anti-shigella, anti-salmonella and anti-typhoid sera. Those showing macroscopic agglutination were submitted to biochemical studies, including reactions on carbohydrate broths, and reactions on indol, urea, citrate and motility media. Any cultures (except *Sal. typhosa or shigella*) having the characteristic reactions of a salmonella species were then submitted to Dr. Erich Seligmann, Director of the National Salmonella Center, New York City, whose identifications of the salmonella in cases 3, 5, 13, 15 and 18 is hereby gratefully acknowledged.

## SUMMARY

(1) The occurrence of 18 bacteriologically proven cases of enteric infection in the Delaware Hospital during 1949 is presented.

(2) The chief symptoms of the patients, their days of hospitalization, and the specific therapy used are described.

(3) The bacteriological technics used in the isolation and identification of the etiological agents are outlined.

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## CLINICOPATHOLOGIC CASE RECORD

Alfred E. Bacon, Jr. M. D.,*
and
Park W. Huntington, Jr. M. D.,*
Wilmington, Del.

### Presentation of Case**

Dr. Bacon:

The first Delaware Hospital admission for this 77 year old white woman was on December 7, 1947 for pain in the right upper quadrant of the abdomen radiating to the back between the scapulae. She presented a history of three such episodes in the five years prior to admission. She denied jaundice and change in the color of the stool.

Physical examination was negative except for cardiac enlargement and an apical murmur which was not transmitted.

Routine laboratory studies at that time were essentially normal. The hemoglobin was 13.4 gms (86%). She improved on a conservative medical regimen.

The second admission to Delaware Hospital was on November 12, 1948. At this time the patient gave a history of marked generalized weakness coming on gradually over a period of 5 to 6 months, numbness in both legs, and loss in confidence in her walking ability. She described periods of epigastric distress but had had no nausea or vomiting. She had experienced exertional dyspnea for several years prior to admission. There had been a recent weight loss of about 20 pounds, dark almost tarry stools with no history of iron medication, and urinary frequency and urgency. The patient thought she might have had slight swelling of the ankles at times prior to admission.

Physical examination at that time revealed a slightly obese, elderly white woman with a pale, sallow, yellow skin. Dyspnea on slight exertion was noted. The temperature was 98.8° F.; pulse 100; respirations 36; and blood pressure 198/88. The conjunctiva was very pale. The tongue was coated, rough and pale in color. An occasional wheeze was heard over both lung fields. The heart was said to be enlarged and an apical systolic murmur was heard. No abnormalities were found on examination of the abdomen. No ankle edema was noted. The biceps, triceps and patellar reflexes were present and equal. The Achilles reflexes were absent bilaterally. Vibratory sense was absent in both lower extremities.

Laboratory data: Red blood count 1.9 million; hemoglobin 6.2 gms (40%); color index 1.05; mean corpuscular volume 126 cubic microns; mean corpuscular hemoglobin concentration 25.8%; reticulocyte count 0.6%. The white count and differential were normal. Urinalysis showed no abnormalities. The urine was negative for bile and contained a normal amount of urobilinogen. Serum albumin was 4.18 gms.%; serum globulin 1.36 gms.%; total serum protein 5.54 gms.%; icterus index was 10. On four occasions the stool was strongly positive for occult blood. Gastric analysis was negative for free HCL after alcohol gavage.

Upper gastro-intestinal serial x-rays showed a normal stomach and duodenal cap. Two large duodenal diverticule, one near the ampulla of Vater, the other in the third portion of the duodenum were visualized. Both were inside the duodenal loop. There was no retention of contrast material in the diverticulae. Also noted was an oval shaped zone of calcification measuring approximately 1 x 1½ cm. overlying the region of the left kidney pelvis. This area had a rather dense laminated appearance with a relatively translucent center.

Barium enema showed numerous small diverticulae thru-out the descending and sigmoid colon but no other abnormalities. Chest film showed moderate calcification of the aortic arch but no cardiac enlargement or other abnormalities.

The electrocardiogram was not abnormal.

Course during this admission was unremarkable. She was digitalized and given liver, iron and blood transfusions. Maximum reticulocyte response was 1.3% on the 2nd day of liver therapy. Bone marrow aspiration after therapy showed essentially normal marrow with erythroblastic maturation. She was followed in G. I. Clinic until the present admission, receiving weekly liver injections, and a maintenance dose of digitalis.

The third and last admission to the Delaware Hospital was on April 23, 1949 at which time the patient complained of anorexia, fatty food intolerance, bloating and belching for one week prior to admission, nausea and vomiting, and right upper quadrant pain radiating to the right costal margin posteriorly. The pain was said to appear at any time and to have no relation to meals. There was no history of jaundice, dark urine, or clay colored stools. The stools had been black, appearing almost tarry. The patient had, however, been receiving iron and liver therapy since her previous admission. There had been obstipation of 2 to 3 years duration. In the past there had been attacks of bronchial asthma but none had occurred during the previous six months. The patient had been on a maintenance dose of digitalis since her previous admission. Review of systems was essentially negative at that time.

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*Internes, Delaware Hospital

**Delaware Hospital Case No. 150725, presented at Staff Clinical-Pathological Conference.

Family history was non-contributory.

The positive physical findings at the time of the third admission were as follows: Temperature 99°F; pulse 80; respirations 20; blood pressure 168/64. The sclerae were slightly icteric. The heart was enlarged to the anterior axillary line at the apex. There was a slightly apical systolic murmur. The liver edge was palpable 2 to 3 cm., below the right costal margin. Extending below the liver edge and seemingly attached to it was a palpable mass ¾ cm. in diameter.

Laboratory data: Red blood count 3.0 million; hemoglobin 9.8 gms. (62%) color index 1.03; white blood count 5,500; polys seg. 70%; lymphocytes 24%; monocytes 3%; eosinophiles 2%; basophiles 1%; BUN 12.8 mgm%; icterus index 18 bilirubin 0.1 mg.%; cephalin flocculation negative; prothrombin 83%; total serum protein 5.78 gms.%; albumin 3.74 gms.%; globulin 2.04 gms.%; plasma chloride 620 mgm%. Mazzini negative. Urine was alkaline, turbid; specific gravity 1.010; sugar, acetone and albumin negative. Sediment showing 15-20 white blood cells per high power field and much amorphous material.

Cholecystogram showed no definite concentration of dye in the gall bladder, which could never be visualized. Diagnosis: Nonfunctioning gall bladder.

Electro-cardiogram showed definite myocardial damage manifested by low T waves and slurring of QRS complexes. This was thought not abnormal for the patient's age. The tracing showed no evidence of infarction.

The entire course in the hospital was relatively afebrile. The patient was out of bed frequently for the first week but gradually became bed fast as nausea and vomiting became progressively worse, although partially alleviated by suction drainage through a Levine tube. The patient was presented at surgical conference. Opinions as to the nature of the abdominal mass varied from liver, to gall bladder, to kidney. Exploratory laparotomy was voted down. Two weeks after admission the patient suddenly developed purple red mottling and edema of the left lower leg; with absence of dorsalis pedis and posterior tibial pulsations, and decrease in skin temperature. Pain was minimal. Vasopressers and anticoagulents caused a slight improvement in color and increase in skin temperature. The patient died in her sleep about 48 hours later.

### DIFFERENTIAL DIAGNOSIS

Dr. Huntington:

This case presents a picture of disease manifest in three main systems; cardiovascular, hemopoietic, and gastro-intestinal.

Considering the cardiovascular system the patient, being seventy-nine years of age, can be expected to show some arteriosclerotic disease and its concomitant effects. The systolic hypertension, cardiac enlargement and occasional attacks of beginning cardiac failure are probably on this basis and therefore not the prime considerations in this case.

Disease of the hemopoietic system appears as a macrocytic hypochromic anemia as shown by the low red blood cell count and hemoglobin, increased mean corpuscular volume, and decreased mean corpuscular hemoglobin concentration. There was also generalized weakness, yellow pallor of the skin, pallor of the conjunctiva, lack of hydrochloride acid in the gastric contents, and a coated rough tongue. Symptoms and signs of subacute combined degeneration of the spinal cord as seen in primary pernicious anemia were elicited as numbness of the legs, ataxia, and loss of vibratory sense.

The patient showed a progressive course of symptoms through her hospital admissions involving chiefly pain and tumor in the right upper quadrant. This pain in the right upper quandrant leads thought toward peptic ulcer, carcinoma of the stomach, chronic passive hepatic congestion, liver abscess, carcinoma of the hepatic flexure of the colon, pancreatic cyst or neoplasm, and gall bladder disease.

Inability to visualize an ulcer crater or gastric filling defect by x-ray, the lack of febrile toxemia and absence of an obstructive type of colicky abdominal pain must be considered in making the diagnosis. Tumor in the right upper quadrant could be hepatic: cirrhosis, liver abscess, hydatid disease, congestive failure, leukemia and metastic or primary malignancy. Other possibilities are renal tumor, pancreatic cyst or neoplasm, carcinoma of the hepatic flexure of the colon, and hydrops, inflammation, or carcinoma of the gall bladder.

The immediate cause of death probably was due to a pulmonary embolus emanating from a venous thrombosis in the left leg. The description of the clinical picture is suggestive of this phenomenon. This does not explain the chronic progressive disease which is of chief importance here. The case can best be explained on the basis of malignancy involving the gall bladder. This has been considered because of the age of the patient, the late development, character and location of the symptoms, the blood picture, the failure to visualize the gall bladder by cholecystogram and the palpable mass in the right upper quadrant.

The blood picture findings are probably related to abnormalities of the digestive tract. The macrocytic hypochromic anemia could have been the result of liver damage through malignant spread, and therefore lack of production of the factor for erythrocytic maturation. Chronic blood loss is probably an important factor in the blood picture. The stools were tarry and positive for occult blood on several occasions. The question of the source of bleeding naturally presents itself. Malignancy of the stomach, duodenal ulcer, esophageal varices and inflammation of the stomach must be considered in this respect.

### SUMMARY

This concerns an elderly woman who over a period of years has shown a history concerning pain and tumor in the right upper quadrant of the abdomen associated with a marked anemia. Malignancy seems to be the most likely pathological process, and the gall bladder the site of origin.

Cecil Watson states, "Carcinoma of the gall bladder is usually associated with cholelithiasis and is frequently seen in females. It may originate in any part of the organ. If primary in the fundus, direct extension to the liver is common. Tumors of the body often invade the bile ducts. The place of origin is important with respect to the presence or absence of icterus and the ability to palpate a mass."

*Dr. Huntington's Diagnosis: Primary Carcinoma of Gall Bladder.*

Dr. Edgar R. Miller.*** I wish to thank Dr. Huntington for his splendid discussion. The first point of interest is of what did the patient die. It is reasonable to believe since there was a purplish-red mottling and edema of the left lower leg that an embolic phenomenon was present or possibly a thrombosis. The most likely cause would be a pulmonary embolus from a venous thrombosis of the leg or possible a thrombus from the right heart to the lung. Again, a thrombus to the arterial circulation must be considered to the leg or the left heart.

However, beside the cardiovascular system being at fault, we have two other systems. One is the hemopoietic, the other the gastrointestinal. The macrocytic hypochromic anemia could be from blood loss, in view of the fact that there have been numerous tarry stools. I think pernicious anemia could be ruled out because of the hypochromia and the results of the bone marrow study. Furthermore, there was a poor response to liver therapy as far as the reticulocytes were concerned. Liver destruction apparently was minimal in view of the fact that liver function tests were normal. There was slight icterus, but this could either come from some obstruction in the common duct, or hemolysis following pulmonary embolus.

The last and most important system that was responsible for the most important illness in this case is the gastro-intestinal tract. The melena must be explained, perhaps from carcinoma of the stomach which sometimes is not revealed by gastro-intestinal x-ray.

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***Attending Chief, Division of Medicine.

However, I am more inclined to think the diverticuli in the duodenum might have undergone ulceration with malignant change. This could easily account for the patient's marked pain in the upper right quadrant.

I realize this is stepping out on a limb; nevertheless, it has been definitely demonstrated by Dr. Bockus and Dr. Spriggs that duodenal diverticuli may cause symptoms in 50% of the cases. These symptoms may resemble ulcer or even gall bladder disease. They may have the complications of ulcer; namely, hemorrhage, obstruction, perforation and may undergo malignant changes.

I would not be surprised to find some calculi in the gall bladder. It is reported that malignancy of the gall bladder occurs in 5% of the cases. If I were to choose between malignancy of the gall bladder and ulcerative changes in the duodenum with malignancy, I would choose the latter in view of the fact that it would better explain the tarry stools.

Finally, we have to explain the ring-like calculi. It is in the epigastrium, more or less in the upper left quadrant. As one reviews the films, they certainly look like gallstones that have escaped from the gall bladder; yet, there is no history to support this. The next likely diagnosis is calcified lymph glands.

In summary I would like to say the patient died of a pulmonary embolus; second, ulcerative changes of the duodenal diverticuli with possibly malignant degeneration; thirdly, an anemia secondary to blood loss over a long period of time and also malnutrition. Indeed, this has been a most interesting and perplexing case.

### Pathological Diagnosis

*Primary Carcinoma of Gall Bladder, with Cholelithiasis*

*Pulmonary Embolism*

*Secondary Carcinoma of Duodenum with Ulceration*

*Secondary Carcinoma of Liver, Mesenteric Nodes*

*Left Thrombophlebitis*

*Arteriosclerosis, Myocardial Fibrosis*

*Calcified Mesenteric Lymph Nodes*

## DERMOID OF THE CONUS MEDULLARIS

## (Urogenital Complications)

Brice S. Vallett, M. D.*
Wilmington, Del.

It is common knowledge that in many injuries and tumors of the spinal cord careful supervision of urinary function becomes mandatory.

In March, 1947 a young man recently discharged from the Service, having spent some time in the South Pacific theatre, was referred for the treatment of prostatis, urethritis, and enuresis. The enuresis began in 1941 subsequent to a football injury to the lumbosacral region. While in the Service he developed a urethral discharge with fever and was treated for prostatitis at Bainbridge, Maryland. From here he was referred to the hospital at Bethesda for further study and possible neck resection, but was discharged without further treatment. Upon his arrival in Wilmington he was hospitalized and cystoscopy revealed marked trabeculation and sacculation of the bladder, relaxation of the internal sphinctor, diminished sensation and a hypotonic bladder. It was our impression that the old football injury was responsible for the neurological bladder signs and symptoms. Drugs for parasympathetic nerve stimulation were given and attempts made to acidify the urine. The sexual function was not disturbed, erection and ejaculation being considered normal by the patient. A sperm count was low, but sperm forms were normal, with good motility.

He continued with his studies at the University of Delaware, but in the summer of 1948 began to experience difficulty in moving his bowels and fully emptying his bladder. Despite this progression of symptoms the idea of a spinal cord lesion did not occur to me. Dr. Edmund G. Laird and Dr. Kenneth M. Corrin were asked to see the patient and concurred in the diagnosis of a lesion of the conus medullaris, probably tumor. The patient was referred to Dr. Frank Otenasek, of Baltimore, who performed a laminectomy. In his words "the lesion is practically a medical curiosity for it was a congenital teratoma arising within the conus medullaris. The tumor contained bone and epithelial tissue and even hair of the same color as the patient's. It was just about as large as a plum. Only two-thirds of it could be removed without fear of giving him permanent paralysis. It seems likely that the tumor has destroyed the conus medullaris and for this reason I would hardly expect recovery of bladder function. The tumor will recur, but it is so slow growing that it will probably be many years before paralysis occurs, if ever.'' (Dr. Otenasek later called the tumor a dermoid).

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*Director, Urology Division, Delaware Hospital.

Shortly after his return from Baltimore the patient was readmitted to the Delaware Hospital with chills, fever and urinary retention, the residual urine measuring 1000cc. A high cystostomy was performed and a #30F DePezzar tube placed in situ. For the next three months he was afebrile and attended his daily classes at the University. His appetite was good and he carried on normally even to the extent of attending and participating in a square dance. At the end of three months the suprapubic tube was removed but after a few weeks without the tube he was again admitted to the hospital with fever and a residual of 1000cc urine. The suprapubic scar was healed, the blood urea nitrogen was 9.6 mg. Hemoglobin 88., white blood corpuscles 11,000. The urine had a neutral reaction, albumin plus four, pus cells too numerous to count, red blood cells 15-25.

Endoscopic vesical neck resection was carried out in April, 1949. During convalescence the patient, while talking to friends in the hospital corridor, sat on a hot radiator and lacking sensation in this area received third degree burns of both buttocks. These were successfully skin grafted by Dr. Edmund Laird.

Eight months later the patient is ambulatory, afebrile, with spontaneous satisfactory voiding and satisfactory bowel movements, He has attended his classes regularly and takes a keen interest in life, He continues to take urecholeine by mouth. The sexual status is unsatisfactory. Before Operation there was penetration and ejaculation, but erection now is but momentary before ejaculation occurs.

## Discussion

As there is a definite cortical influence on both the acts of urination and ejaculation, in the presence of nerve loss the most intense voluntary effort may be futile in preventing premature ejaculation. Following spinal injuries three stages in the recovery process of bladder function are recognized. Preceding these three stages the immediate status is spoken of as ''spinal shock.'' Here we have an immediate but usually temporary suppression of all reflexes caudal to the injured segment (Prather).

In the first stage of recovery the bladder is atonic and there is loss of reflex contractions of the detrusor muscle. Overflow incontinence may occur from the distended bladder. This stage may last from 24 hours to 18 months (Thompson-Walker) (Prather).

In the second stage of recovery there is a return of mild reflex activity of the bladder, it becomes smaller and intravesical pressure is increased. Munro believes that some of the reflex contractions arise wholly within the bladder wall and consequently this stage has been given the name ''autonomous cord bladder'' and is manifested clinically by overflow incontinence. Prather cites several authors (Lewis, Nesbit, Gordon, Munro) who state that this may be the final stage of recovery in cases which have had complete transection at the level of the sacral segments of cauda equina. In the third stage of recovery the patient with complete transection is expected to progress to a final stage where micturition becomes periodic, involuntary, forceful and efficient (Prather). There is no voluntary control over voidings but the patient is dry between them. The term ''automatic reflex bladder'' is used also to describe this stage. Some patients do not attain this stage, remaining in the first or second stage.

Patients may manifest voluntary contractions and control where there is partial transection. These may finally acquire voluntary micturition and adequately empty the bladder. In the case herein reported manual pressure and contraction of the abdominal muscles was employed before endoscopic vesical neck resection was performed. Patients with complete lesions above the lumbar segments are more apt to develop automatic voiding than where the lesion is below these segments.

In caring for these individuals they must be protected from the excoriating effect of urine. Infection must be combated at every turn. Ambulation as early as possible is desirable. Intermittent catheterization carries a higher mortality than any known method and is mentioned here only to be condemned. There are some advocates of a non-drainage program. This program does not wholly prevent infection and is not applicable in the presence of infection. It requires manual massage of the bladder every four hours. Our preference is for constant drainage. In young men we prefer suprapubic drainage, our main object being to avoid urethral sepsis with secondary epididymitis. In older men not concerned with reproduction, bilateral vasectomy and an inlying catheter is satisfactory. Tidal drainage as popularized by Munro seems to be an advantage and may be employed with both suprapubic tube and inlying urethral catheter. This closed system of drainage would seem superior to periodic manual irrigations.

The bedfast patient must have a large fluid intake. Among the drugs used to combat calculus formation may be mentioned the aluminum hydroxide gels, sodium acid phosphate, dilute hydrochloric acid. Estrogens, vitamins, and special diets are also employed.

Cystometric studies are valuable in plotting the status of bladder tone, excretory urography gives information concerning the upper urinary tract, while urinary cultures should be taken frequently. When all bladder drainage is abandoned urinary antiseptics must be used judiciously. A thorough attempt to establish either voluntary voiding or an automatic reflex bladder should be made before endoscopic vesical neck resection is employed.

## BLUE CROSS PROTECTS THE PEOPLE—WHO PROTECTS BLUE CROSS? *

Paul R. Hawley, M.D.**
Chicago, Ill.

Blue Cross is a child of the hospitals of America. Like all children, inevitably it is growing up. Parents often try to keep their children from growing up—sometimes with disastrous results.

It is the wise family which realizes that there is a time in the life of every child when the relationship between parent and child should be altered from one of strict authority and unquestioning obedience to one of companionship and mutual devotion to the family interest.

There may be, I regret to say, an occasional Blue Cross Plan which has not developed this feeling of family loyalty. At the other extreme, there are a few Blue Cross Plans which appear to be maintained largely as servants of the parents rather than as partners in the family unit. I do not know which of these extremes is worse. I only know that both are bad.

Blue Cross cannot exist five minutes without the support and co-operation of its member hospitals. On the other hand, Blue Cross is becoming so rapidly a most important factor in the economy of hospitals that it may well be the foundation upon which the future of the voluntary hospital system must rest. Blue Cross will pay the hospitals of America approximately $350 million in the year of 1949. This is about 27 percent of the total income derived from patients.

Along the Atlantic Seaboard, the proportion of Blue Cross payments to the total patient payments to hospitals is much higher, reaching 80 percent in some areas. As Blue Cross grows, so will hospitals look to it more and more for payment for their services.

It is, therefore, high time that we reach a firm family agreement upon the principles which will determine family policy in the future—not one policy for hospitals and another policy for Blue Cross.

I think we can start from two premises. The first is that Blue Cross is a public service, devoted to the public interest. It is just as important to the public welfare that hospitals are economically secure as it is that the public obtain hospital care at the lowest cost consistent with high quality. The value of Blue Cross protection depends in large measure upon the quality of care it affords. So, the security of voluntary hospitals must always be a matter of great concern to Blue Cross.

The other premise is that the public will not long support Blue Cross if the Blue Cross subscriber is being exploited in an effort to subsidize hospital operations in which he does not profit to a degree commensurate with his payments, or if he is required to carry the cost of extravagant or inefficient administration. To be permanent and successful, any policy structure we erect must rest equally upon these two premises.

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*Read before Maryland-District of Columbia-Delaware Hospital Association, Wilmington, November 14, 1949.

**Chief Executive Officer, Blue Cross - Blue Shield Commissions.

We are a luxury-loving people. We demand not only the ultimate in comfort but, often in addition, considerable decorations which flatter our ego without adding to our comfort. We have just passed through a period of full employment at war-time wages with the cost of living controlled. People had money, and they spent money. The demand for hospital care strained the capacity of our hospital system. For the first time, many people could afford luxury and they revelled in it. The number of hospital employees per patient increased out of all proportion to the lessened hours of work per employee.

All this made for more accurate administration and more luxurious service; but where, if at all, did the law of diminishing returns begin to operate for the average patient?

No one would dispute that the Cadillac car is a finer car than the Chevrolet. I have no doubt but that, could they afford it, almost all people would purchase Cadillacs in preference to Chevrolets. However, when compared solely as a means of getting from one place to another, the Cadillac holds no advantage over the Chevrolet. Each is capable of more speed than safety permits. Each is a reliable piece of machinery. The greater cost of the Cadillac is never amortized through longer life and less maintenance—it is chargeable only to luxury.

What would be the effect upon the general welfare of our people if all automobile manufacturers decided to produce cars in the Cadillac class? Would this add to or detract from their efficiency as well as their comfort and pleasure. What I am trying to say is that, regardless of the cost of production of an article, it is easy to price it out of a large part of its market; and that there is a point in every kind of production and in every kind of service at which further increase in cost adds nothing to utilitarian quality. No health service can afford to fix its eyes upon the carriage trade.

Now, I know that luxurious service, as distinguished from adequate service, is not responsible for the increased cost of hospital care. I do not know that it is responsible for any appreciable part of the increase. But I do know that it is a real danger, and one which must be controlled, if not wholly eliminated, if medical care is to survive upon a voluntary basis.

A much greater part of the increaased cost of hospital care is chargeable to changing patterns both of medical care itself and of the economics of medical care. It is not necessary to recount the great advances in medical and hospital care which, while immeasurably improving the health of the nation, have also added to the cost. This effect cannot be avoided, and no one would advocate a return to the standard of medical care of even 25 years ago.

It is, rather, to the changed pattern of the economics of hospital operation that I would address myself. These changes have been relatively slow and insidious. It is probable that they could have been prevented, in whole or in large part, by vigorous, concerted action as soon as their effects were recognized. But they were associated with a steady rise in the incomes of the consumers of medical care, and the latter factor was used as a palliative to the former, rather than an effort being made to halt rising costs.

The first of these changes in the economic pattern of hospital support was, perhaps, the drying up of the sources of private philanthropy through increasing rates of taxation and the depreciation of endowments by the lowering of interest rates as the result of the deficit financing of the Government. There was a time when it was not difficult to meet hospital deficits by annual drives for funds. In those days, many hospitals charged less than cost for hospital care, even for private rooms. The public never realized this fully, and had an erroneous idea of the cost of hospital care.

Thus, more and more of the cost of the hospital was shifted to the patient until, today, many hospitals have no other source of income. To add to this burden, government—State and local—has failed to increase payment for welfare cases in keeping with rising costs; and, in many places, hospitals are caring for public patients at a loss which can only be charged against the paying patient—Blue Cross patients as well as the noninsured.

Then, practically all of the training done in hospitals has become a financial liability rather than a financial asset. Training is still a great quality asset, but one in the red on the ledgers. Training, especially that of interns and residents, is not only expensive as regards the direct cost, but, in too many places, is particularly expensive for Blue Cross patients.

Everyone, who has been an intern or a resident, is fully aware of the embarrassment caused by questions asked by the attending physician or visiting staff which cannot be answered. For this reason, too often the house staff orders every conceivable test and roentgenography from the scalp to the toes, in order to be able to answer any question—whether pertinent or not. When a patient carries no insurance and must pay out of pocket for such examinations, due caution is usually exercised. But the Blue Cross patient is fair game. There is that curious defect in public morality which makes it no crime to gouge an insurance company. Many people, who would be horrified at the very thought of stealing one penny from a fellow-man, have not the slightest compunction about taking money under false pretenses from an insurance company.

It is because of this curious blind spot that, to exist, every kind of insurance, except health insurance, is protected by law. Fire insurance could not exist for one week if there were no law against arson— if, after an unfortunate afternoon at the race track, a policy-holder could strike a match to his house in order to replenish his purse. Marine insurance could not exist if barratry were not a crime. But it is obviously impossible to enact laws against unnecessary utilization of medical care.

It has been said that Lloyd's of London will insure against any conceivable kind of hazard *except* a moral risk. This is not a very flattering commentary upon human nature, but nevertheless it is one which we must accept with as good grace as possible.

Who, then, will protect Blue Cross? Blue Cross is wholly at the mercy of hospitals and doctors—largely the latter—and must rely upon only them for protection against abuses. It is ordinarily the doctor who says when the patient goes to the hospital, what services shall be given him while he is there, and when he shall leave the hospital.

No one realizes more clearly than I how difficult this responsibility can become. The Blue Cross patient, aware of his protection, may demand hospitalization as a luxury rather than a necessity. Upon the excuse that the home is being renovated, or that the cook will not return for several days, he may demand to remain in the hospital beyond the time that hospital care is necessary. It is not easy for the physician to pit his own sense of right and wrong against a capricious desire of the patient. We must make it easier for him by educating Blue Cross members that each day of unnecessary utilization of their benefits must be paid for by increased cost of their own protection as well as that of all other Blue Cross members.

However, there is one field in which the physician can enforce justifiable economy without much opposition from the patient. This is in the matter of what services are ordered for the patient during his stay. Blue Cross earnestly desires that every member be given necessary service in the hospital—and perhaps even a little more. But, unless wholly unnecessary abuses are curbed, Blue Cross may be priced out of its most important market. It seems significant to me that, whereas the cost of room and board in hospitals has doubled in the past few years, the cost of rugs and dressings for Blue Cross members has quadrupled in the same period. Blue Cross members seem to be especially susceptible to avitaminosis from the tons of vitamin pills that Blue Cross is called upon to pay for.

So, in summary I would impress upon you that Blue Cross must be protected to the fullest possible degree against the danger of pricing it out of the market—and once Blue Cross is priced out of the market, we shall have compulsory health insurance. Never doubt that for one minute!

I would suggest that Blue Cross can be protected in many ways—none of them giving full protection but all of them together affording a high degree of protection,

1. Re-evaluation of hospital care, and elimination of services which are purely luxuries and which do not contribute significantly to the recovery of patients.

2. Insistence upon adequate reimbursement for public services of hospitals, such as in the care of the indigent, the operation of emergency rooms, and the training of doctors, nurses and technicians. There are already areas in which the full cost of the care of public cases is met from public funds. We must make this the rule rather than the exception. Acceptance of public responsibility for the educational programs in hospitals is another matter, however; and we must initiate a campaign for this.

3. Education of doctors, hospitals and the public that abuses of health insurance only raise the cost of this protection, and that this cost can be kept low only by restricting its use to necessities.

In conclusion, I would remind you again that we are a family in this health field, whether we agree or not. We can make this a strong and a happy family, with each member devoted to the interests of the others; or we can be a family of selfish individuals. If we elect the latter, the Government is sure to step in and brand us as incorrigibles who, for the protection of the public, must be controlled by the Government.

Hospitals *must* be kept in a healthy condition. So must Blue Cross. The disease of excessive cost is highly contagious. If one member of the family contracts it, the other is sure to get it. And, if both of us get it, you may be sure we shall be quarantined forever by the Federal Security Agency.

425 *N. Michigan Avenue.*

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## MISCELLANEOUS

### Polio

To the Editor:

There have been many inquiries recently regarding the arrangements for covering the cost of care for poliomyelitis patients. There are a number of factors which will be of interest to your readers.

During 1949 a poliomyelitis incidence of unprecedented size (more than 37,000 stricken since January 1) has put serious financial strain upon the National Foundation for Infantile Paralysis. For the first time in its eleven year history it was necessary to conduct a Polio Epidemic Emergency Drive which although very helpful did not entirely meet current needs.

In its avowed purpose to lead, direct and unify the national fight against infantile paralysis the National Foundation undertook support of research and education, for in these areas lie the ultimate hope for eradication of poliomyelitis. These programs are not to be compromised in any way.

The greatest cost to the National Foundation, however, is payment for medical care to patients. It is urgent for all physicians to assist in the institution of measures which will reduce costs without prejudice to patients. The chief costs are for hospitalization. Many poliomyelitis patients are hospitalized when they can be cared for at home at a reduced cost.

Our experience in this year's epidemic which has spared virtually no part of the country suggests the following:

1. Abortive, nonparalytic and mildly paralytic poliomyelitis patients are being hospitalized in the mistaken idea that the stated period of isolation must be spent in the hospital.

2. Overly prolonged hospitalization is frequent. This is particularly true of the paralytic patient who has achieved maximum improvements from daily physical therapy. Home care with periodic office or clinic visits is then in order.

3. There still exists in some places a general attitude that poliomyelitis is a bizarre disease which only a few physicians can manage. This is not so. It is disturbing, for example, to find physicians leaning so heavily upon the guidance of physical therapists and nurses. The physician's assessment of the total patient is the best index in determining when a patient shall leave hospital to receive home, office or clinic care.

4. Patients hospitalized on general ward services are not charged medical fees ordinarily. When patients are hospitalized on isolation wards for poliomyelitis, however, bills for medical fees are at times submitted. Payment is frequently made by the local chapters of the National Foundation whose treasuries are now generally depleted.

It is hoped that your readers will understand clearly how urgent is our need for cooperation from all practicing physicians in the matters mentioned above.

Sincerely yours,
Hart E. Van Riper, M. D.
Medical Director

# 1789—MEDICAL SOCIETY OF DELAWARE—1950

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# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 January, 1950 No. 1

## Good Manners

Now that we are starting a new year, after presumably turning over a new leaf, wouldn't it be nice if we would all resolve to improve our manners in 1950? Politeness costs nothing, but pays big dividends. Courtesy never made an enemy, but has made a lot of friends for the man who exhibited it.

The thing that brings this question of good manners to our mind is the telephone, where people frequently show themselves up at their worst. You are all familiar with Doctor Doe who says: ''Miss Roe get me Doctor Blank.'' She does so, and Doctor Blank waits—and waits — and waits,—and finally Doctor Doe picks up his phone. He didn't mean to be rude, but he *was*, grossly so. His time is no more valuable to him than Doctor Blank's time is to Doctor Blank. Why do normally polite people act so churlishly in this matter of telephone calls? In the good old days Doctor Doe called Doctor Blank and hung on to the wire himself until Doctor Blank answered. For a very, very, very busy man that sort of ''horse and buggy manners'' may be too slow, but it's still good manners! In fact, when have good manners ever been out of date? And who is so very, very, very busy?

## The January Supplement

As usual for January and July, this issue is labeled on the front cover as the ''Delaware Hospital Number.'' By an old rule of the Publication Committee we thus credit an institution or a society on the front cover, provided it supplies 75% of the scientific material in that issue.

With this January isssue there also comes a Supplement containing some historical notes whose publication has been delayed, together with a roster of members of the Society. We know there will be errors in this roster, and we would appreciate it very much if all who detect errors or omissions will advise us of them promptly, in writing.

## NCCMS 100 Years Old

The N.C.C.M.S. was at least 100 years old in 1949. It is possible it may have been formed in 1848, or even earlier, though not likely. The earliest criterion available is the record of the AMA Conventions. Data in this connection will be found in the historical notes referred to above.

Due to the stress of urgent business at the December meeting of the N.C.C.M.S. there was no time for any celebration of this centenary event. Sic transit gloria mundi.

## New By-Laws

The new By-Laws adopted by the Medical Society of Delaware at the last two meetings of the House of Delegates are being printed in booklet form. One copy will be mailed to each member of record. The new state By-Laws will necessitate each of the three county societies revising their own county By-Laws within the next few months, in order that there will be no conflict.

### PUBLIC FORUM

The forum for the public on "The People Talk About Medical and Hospital Care," held at the Delaware Academy of Medicine, Wilmington, on December 15, 1949, was attended by an over-flow audience. Delawareans are by now familiar with much that was said, since the newspapers gave considerable space to these transactions, and the wire recording was partly broadcast over stations WDEL and WILM.

Doctors and hospitals were criticized by the public, but in a restrained manner. Likewise, the public learned something about medical and hospital problems that they did not know before. Meetings such as this do much good in promoting good relationship between public and profession.

Another step forward for our Society in connection with PR—Public Relations— is the information of a Grievance Board, consisting of 5 past presidents of the Society. If this Board functions as well as that in Colorado and other states it will be rendering both public and profession a new and distinct service. We have just received a letter from AMA headquarters congratulating us upon this step, and asking for details of its setup, procedure, etc. One thing is certain: We should encourage any and every facility that promotes "a meeting of minds" of physician and patient.

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## "Get Into Politics"

No matter what the Washington planners say, the compulsory sickness insurance proposal now before Congress means "nationalization of American medicine down to the last bottle of aspirin," Rep. L. C. Arends (Rep., Ill.) of Melvin, Illinois, told the Illinois State Medical Society at its recent convention.

Rep. Arends, who is the Republican whip of the lower house, was keynote speaker at an all-day conference called by the Society in the LaSalle Hotel here to discuss the "big push" the administration is expected to make this winter to put over the compulsory sickness insurance proposals embodied in S. 1679. Representatives of most of the 91 county medical societies in Illinois were present together with spokesmen for many other groups opposing socialized medicine. Percy E. Hopkins, M. D., of Chicago was in charge of the meeting, while Walter Stevenson, M. D., of Quincy, president of the Illinois State Medical Society, acted as chairman.

Rep. Arends called on the medical and other professions represented to get into politics actively and aggressively as the only way to disinfect the national government of the socialist contagion.

"When an American citizen is sick or infirm," Rep. Arends told the medical men, "he wants to consult a doctor of medicine, not a doctor of philosophy in the Social Security Board, or a doctor of law in the Federal Security Administration, or yet a doctor of political science, or a doctor of civil administration.

"The proposals for socialized medicine now before Congress seek the nationalization of American medicine down to the last bottle of aspirin, with Washington in complete direction and control of every hospital, every medical school, every research laboratory, every physician, every dentist, every nurse and every hospital technician in the land.

"To my mind, this issue reaches to the very roots of American constitutional government. For I believe firmly that, if this plague of socialized medicine can be fastened upon the people of the United States by adroit government propaganda, then it will not be long before the last vestige of freedom under law will disappear in every other relationship of life.

"For, if American medicine can be taken over by the Washington bureaucracy, it will be only a matter of time until education will be taken over, then insurance, then publications and public intelligence, finally all entertainment and cultural expression. The handwriting is on the wall.

"That, at least, is the history of national socialism in modern times. It must be complete and total. For, so long as men and women are free in one sphere of life, they will push and struggle for freedom in wider spheres. At length only the proven measures of the police state can repress the human instinct for freedom."

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*Official Organ of the Medical Society of Delaware*

INCORPORATED 1789

VOLUME 22 JANUARY, 1950 NUMBER 1

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly.

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of
DELAWARE
1789 - 1939

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# DELAWARE STATE MEDICAL JOURNAL

*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

VOLUME 22 JANUARY, 1950, SUPPLEMENT NUMBER 1

## NEW LIGHT ON THE HISTORY OF MEDICINE IN DELAWARE*

W. Edwin Bird, M. D.**
Wilmington, Del.

### Outline

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### In the Beginning

Unless one understands the meaning and the 17th century usage of the term "barber" or "barber-surgeon"[1] there will be confusion as to whether a doctor was or was not present on the various expeditions to the colonies. In view of the facts that sickness among the crew was common, and that women and children also were sent along as colonists, no expedition, at least from England, Sweden, or Holland, came to these shores without at least one of these "barber-surgeons" on shipboard as the "doctor." Sometimes he remained a few years in the colony; sometimes he merely made the round trip on the ship; sometimes he remained permanently. The doctor thus referred to represented that branch of European medicine that sprang from the "surgeons of the short robe" who, while not graduates of a medical school, had developed a guild of practitioners who by diligent study, prolonged apprenticeship, and exclusive restrictions had become especially skilled* in minor surgery, such as the setting of bones, extraction of teeth, lancing of boils, cupping, leching, etc., and in the treatment of sundry illnesses. They corresponded to the general practitioner of today, and were respected and patronized by the masses generally. Only the upper classes secured the services of the academic physicians.

Thus, at that time, the term "barber" meant not a mere cutter of hair, but a practitioner of the healing arts, and a comparatively competent one at that. The result of their training was, that for manual dexterity and therapeutic practicality, these "barbers" or "barber-surgeons" generally rendered to the people a professional service superior to that rendered by their more educated and dignified "surgeons of the long robe", or even by the pompous graduate physicians of that day†. They were addressed and referred to as "Mister", short for "heelmeester" or "heilmeister", a master of healing. The custom of referring to the surgeon as "Mister" persists in England even today, although the surgeon of today is, like the physician, a

---

*Presidential Address delivered in part before the Medical Society of Delaware, Wilmington, October 15, 1947. An abridgement, edited by H. Clay Reed, Ph. D., Professor of History, University of Delaware, was published as Chap. 43, Vol. II, pp. 737-761 in Reed: Delaware, a History of the First State, by the Lewis Historical Publishing Company, New York, Nov. 1947; 3 vols., $42.50 the set. Our thanks to them for permission to reprint their copyrighted portions. Several sections of the ms. have been brought up to date.

**Editor, Delaware State Medical Journal.

*Radbill[2] translates a German poem about them as follows:

I am called on many a behalf,
Can make many a curative salve;
Can heal fresh wounds with right good grace,
And old hurts too, as well as bone breaks;
Heal the French pox and needle a cataract,
Quench Anthony's Fire and teeth extract;
Likewise shave, massage and trim,
And open veins at anybody's whim.

From: Der Arzt und die Heilkundst in der deutschen Vergangenheit. Leipzig; Herman Peters, 1900, P. 78.

†The first Swedish Medical School, the Medical Faculty of Stockholm, was not organized till 1663. The Barber-Surgeons School at Stockholm was reorganized in 1685 as the "Societas Chirurgica."

## EXPEDITIONS TO NEW SWEDEN

| Swed. Exped. No. | Ship | Lv. Sweden 1600 | Lv. Sweden Port | Arr. Ft. Christina 1600 | Important Passengers | | Lv. Ft. Christina 1600 | Arr. Sweden Port | Arr. Sweden 1600 | Important Passengers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Kalmar Nyckel | 12/31/37 | Gothenburg | 3/29/38 | Gov. Minuit<br>Dr. Janeke<br>23 Soldiers<br>Colonists | | 6/15/38 | Gothenburg | 1/—/39 | Gov. Minuit: Lost at sea at St. Christopher 7/1/38 |
| | Fogel Grip | 1/—/38 | Gothenburg | 3/29/38 | | | 4/—/39 | Gothenburg | 6/—/39 | |
| 2 | Kalmar Nyckel | 11/—/39<br>2/ 7/40 | Gothenburg<br>Texel | 4/17/40 | Gov. Hollandaer<br>Rev. Torkillus | | 5/19/40 | Gothenburg | 7/ 1/40 | |
| Dutch | Freedenburg | 7-8/—/40 | Amsterdam | St. Georges<br>11/ 2/40 | | | 12/ 3/40 | Amsterdam | —/—/41 | |
| 3 | Kalmar Nyckel | 8/19/41 | Gothenburg | 11/ 7/41 | Gov. Ridder<br>Dr. Stidden<br>Rev. Christoffer<br>35 Colonists | Pop. 80-90 | 11/29/41 | Amsterdam | 3/28/42<br>3/31/42 | Dr. Janeke |
| | Charitas | 8/19/41 | Gothenburg | 11/ 7/41 | | | 11/29/41 | Gothenburg | 4/15/42 | |
| 4 | Fama | 8/16/42<br>12/29/42 | Stockholm<br>Gothenburg | 2/15/43 | Gov. Printz<br>Papegoja<br>Rev. Campanius<br>Rev. Fluviander | Pop. 183 | 4/14/43 | Gothenburg | 7/—/43 | Gov. Ridder<br>Papegoja |
| | Svanen | 11/ 1/42 | Gothenburg | 2/15/43 | | | 4/14/43 | Gothenburg | 7/—/43 | |
| 5 | Fama | 12/29/43 | Gothenburg | 3/11/44 | Papegoja<br>Dr. Janeke | | 6/20/44 | Amsterdam<br>Gothenburg | 7-8/—/44<br>8/—/45 | Dr. Stidden |
| 6 | Gyllene Hajen | 6/—/46 | Gothenburg | 10/ 1/46 | | | 2/20/47 | Gothenburg | 6/—/47 | Papegoja<br>Rev. Fluviander |
| 7 | Svanen | 9/25/47 | Gothenburg | 12/—/47<br>1/—/48 | Papegoja<br>Dr. Kock<br>Rev. Lock | | 5/16/48 | Helsingfors<br>Stockholm | 6/16/48<br>7/ 3/48 | Dr. Kock<br>Rev. Campanius |
| 8 | Katten | 7/ 3/49 | Gothenburg | Wrecked at Porto Rico 8/26/49 | Dr. Stidden<br>Rev. Nertunius | | (Dr. Stidden and Rev. Nertunius reached Sweden in 1651. Gov. Printz left on a Dutch ship 11/—/53, leaving Papegoja as Acting Governor.) | | | |
| 9 | Ornen | 2/ 2/54 | Gothenburg | Ft. Casimir<br>5/21/54 | Gov. Rising<br>Dr. Stidden<br>Rev. Nertunius<br>Rev. Hjort<br>300 Colonists | Pop. 70 | 7/15/54 | Gothenburg | 9/24/54 | Papegoja<br>Dr. Jancke |
| | Gyllene Hajen | 4/15/54 | Gothenburg | Manhattan<br>9/12/54 | | | (Seized by Van Stuyvesant. Gov. Rising and Rev. Nertunius left on a Dutch ship 11/—/55.) | | | |
| 10 | Mercurius | 11/25/55 | Gothenburg | Marcus Hook<br>3/15/56 | Papegoja<br>Dr. Janeke<br>Dr. Mundt<br>Rev. Mathies | | —/—/56 | Gothenburg | 9/ 6/56 | Papegoja<br>Dr. Janeke<br>Dr. Mundt |

graduate of a medical school. Toner[3] says that the term "doctor", meaning a graduate of a medical school, was not employed in the American colonies before 1769. The Medical Department of the University of Pennsylvania, the first in the United States, was opened in 1765, and its first diploma, that of M. B. (Bachelor of Medicine), was awarded to John Archer, of Belair, Maryland, in 1768. Reed[4] says the word "doctor", meaning physician, was used as early as 1690 in New Jersey, and that in Delaware Timen Stidden[5] was referred to as "doctor" as early as 1677, though he was frequently also referred to as "mister."

Contrary to the generally accepted belief that the first white doctor in Delaware was Timen Stidden*, a barber-surgeon of Hammal, Sweden, arriving in 1641 and again in 1654, there is almost conclusive evidence to show that the first doctor was one Hans (Hanns) Janeke,** a barber-surgeon of Koenigsburg, East Prussia, who apparently arrived in 1638 on the first ship to New Sweden, the *Kalmar Nyckel.* For the first Swedish expedition two barber-surgeons were hired at Amsterdam[6]. The first page of the Journal of the New Sweden Company, giving items of expense connected with this first expedition, records that ten Riksdaler (about $12.00) was paid to "Dr. Hanns" and 8.40 Riksdaler went for medicaments. Radbill[7] states that the late Amandus Johnson[6], the best authority on the early Swedish settlements, informed him that he was satisfied that the "Dr. Hanns" listed was Hans Janeke, and that he actually was a member of the first expedition.

Arriving at Fort Christina (The Rocks) on or about March 29, 1638, Janeke evidently was not only the first doctor in New Sweden but was also the first to appear in the Delaware (South) River Valley, antedating Jan Pieterson, who was stationed further up the river at Fort Nassau, near the present site of Gloucester, New Jersey, by at least three months. Pieterson was appointed surgeon at the Dutch colony on the South River on June 3, 1638, but his term of service did not begin till July 10, 1638, at the stipulated salary of ten florins ($4.00) per month, and lasted until his death two years later.

We have no record to indicate who was the second barber-surgeon hired to accompany the first expedition; the indications are there was only one who actually sailed. If there was a second one it could have been Timen Stidden, in which case he probably sailed here on the other ship, the *Fogel Grip*, and sailed away in June, 1638, along with Gov. Minuit. The available records make no mention of him in this connection. This adventurous soul made three efforts to reach the colony and succeeded twice.

The attached chart of the expeditions to New Sweden, which is as accurate as available data permit, shows that Janeke stayed until 1641, when he was relieved by Stidden, who came out on the third trip of the *Kalmar Nyckel.* Stidden remained this time till 1644, when he in turn was relieved by Janeke, who arrived on the *Fama* for his second tour of duty here. This stay lasted ten years and ended in 1654, when Janeke was relieved once more by Stidden, who had arrived on the *Ornen.*

Stidden had sailed on the *Katten* in 1649 which was wrecked six weeks later at Porto Rico, and he was not able to return to Sweden until 1651. Stidden's activities here then lasted from 1654 until his death in the spring of 1686. He owned considerable land in what is now the northwest section of Wilmington, including the land upon which the building of the Delaware Academy of Medicine now stands.

Janeke, whose background is unknown except for the fact that he was a "barber" from Koenigsburg and presumably a German, and hence his correct name probably Jahneche, made a third trip to the colony on the *Mecurius*, which landed not at Fort Christina but at Marcus Hook, in 1656, because the Swedish colony had been taken over by the Dutch the year before. The Dutch ordered the *Mecurius* to Manhattan but, rounding the Delaware Capes, she refused to sail there, and returned to Sweden, arriving in the fall of 1656. Janeke sailed on her, and thereafter all trace of him is lost.

All the early barber-surgeons who came out for the New Sweden Company received substantially the same pay, 180 Riksdaler (about $216) per year, which compares favorably with the colonial salary of the Rev. Campanius, which in 1643 was 120 Riksdaler (about $144), or with that of the Professor of Physic, in the University of Cambridge[8], which in 1626 was £40 (about $200). However, the purchasing power of money in the 17th century is said to have been some seven or eight times what it was before World War II, and some ten or twelve times what it is today.

---

*Variously spelled, as Timen, Tymen, Tymon, etc., and Stiddem, Steddin, Stedham, Stidhem, Stidham, etc.

**Variously spelled, as Jannche, Janeche, Janecke, Jahneche, etc.

These transmigrations and permutations of Janeke and Stidden indicate that perhaps they had known each other before the first expedition, and that they planned to rotate on a three year basis, the schedule being broken up only by the force of circumstances. There was nothing new or unusual in the internationalism or the polyglottism of the situation wherein Janeke the Prussian and Stidden the Swede signed up in Holland to make a colonizing trip from Sweden to America; for Henry Hudson, an Englishman, sailing for the Dutch, had discovered the very river (South) in America these doctors were sailing for just six days before he discovered the river (North) that now bears his name. Furthermore, the governor of the first Swedish expedition to America, sailing on the same ship with Janeke the Prussian was the Dutchman, Peter Minuit, all of which goes to show that adventurers are adventurers, regardless of country or creed or century.

Fom the standpoint of medicine the important thing is that these two professional pioneers must have rendered acceptable services to the people. Had Janeke not been satisfactory the first time, he would not have been permitted to sail a second time, and having arrived a second time in 1644, for unsatisfactory service he would have been shipped back on the *Gyllene Hajen* in 1647 or on the *Svanen* in 1648. Instead, he remained till 1654, completing a service of thirteen years, 1638-41 and 1644-54. Had Stidden, likewise, been unsatisfactory he could never have practiced here for thirty-five years, 1641-44 and 1654-86, and become a man of comparative affluence, whose death was generally mourned.

## MEDICAL SOCIETIES

### MEDICAL SOCIETY OF DELAWARE

The usual date given for the founding of the Medical Society of Delaware is February 3, 1789. This, however, represents the date of the incorporation of the Society, under the legal title of "The President and Fellows of the Medical Society of Delaware." The incorporators were the following twenty-seven physicians:

John McKinley
Nicholas Way
Jonas Preston
Ebenezer Smith
George Monro
Thomas McDonough
Joshua Clayton
Ezekiel Needham
James Tilton
William Molleston
Edward Miller
James Sykes
Nathaniel Luff
Robert Cook
Matthew Wilson
Joseph Hall
John Marsh
John Polk
John Stephens Hill
Julius Augustus Jackson
William McMechen
Henry Latimer
James McCalmont
Joseph Capelle
Archibald Alexander
Henry Peterson
Levarius Hooker Lee

There is good evidence that a society had been in existence for some years prior to this date. Toner[9], working in the United States Bureau of Education*, with exceptional access to source material, especially early medical Americana, in 1873 tabulated the medical societies then in the United States and listed the "Delaware State Medical Society" as having been founded in 1776. The title given, "Delaware State Medical Society", indicates that the Society was organized in 1776, but subsequent to the formation of the Delaware State, which took place at New Castle on September 20, 1776. Not following the pattern set by the New Jersey physicians who in 1766 founded the "Medical Society of New Jersey," the Delaware doctors, proud of their brand new State, probably did organize themselves as the "Delaware State Medical Society." Toner's listing was primarily to record that there was a statewide Medical Society here, organized in 1776. Toner gives no information concerning the officers, meetings and activities of this Society. When the time came to incorporate, twelve and a half years later, the Delaware doctors did emulate their New Jersey confreres in the selection of their legal title, viz: Medical Society of Delaware.

---

*Joseph Meredith Toner, M. D. (1825-1896), a trustee of the Smithsonian Institution, President of the American Medical Association in 1873, and President of the American Public Health Association in 1874, was the leading medical historian of his day.

It is interesting to note that the first President of the "Delaware State", after the adoption of the State constitution in 1777, was a doctor, one of the original Fellows, John McKinley, who served from February till September, 1777, when he was captured by the British at the Battle of the Brandywine and held prisoner till the end of the war. It is of further interest that the last President of the "Delaware State" and first Governor of the State of Delaware was another original Fellow, Dr. Joshua Clayton, who governed from 1789 till 1792.

Toner's date, 1776, would thus make Delaware the second oldest state medical society in the United States, both in founding and incorporating, yielding rank only to the Medical Society of New Jersey, which was both founded and incorporated in 1766. The state societies organized in this country up to 1800 are:

| | Founded | Incorporated |
|---|---|---|
| New Jersey ........ | 1766 | 1766 |
| Delaware .......... | 1776 | 1789 |
| Massachusetts ...... | 1781 | |
| Maryland .......... | 1789 | 1799 |
| South Carolina ..... | 1789 | |
| New Hampshire .... | 1791 | |
| Connecticut ........ | 1792 | |

The first meeting of the newly incorporated Society was held at Dover on May 12, 1789, and the following officers were elected:

President: James Tilton
Secretary: Edward Miller
Vice-President: Jonas Preston
Treasurer: James Sykes

The Transactions and biographic sketches of the Presidents, from 1789 to 1939, are best outlined by Meredith I. Samuel[10], M. D., in his sesquicentennial volume. Many of the Fellows of the Society have been prominent in the professional and civic life of the state and nation. Their biographies may be found in the standard histories of Delaware, such as Scharf (1889), Conrad (1908), Bevan (1929), and in James Thacher's *American Medical Biography*, 2 vol., Boston, 1828.

Honors in the American Medical Association, the national body of medical men, have come to two of these Presidents. James Couper, who was President of the State Society from 1835 to 1841 and again from 1843 to 1845, was Vice-President of the American Medical Association in 1863. Henry F. Askew, who was President of the State Society from 1851 to 1855 and again from 1875 to 1876, was Vice-President of the American Medical Association in 1859 and was President in 1867, the only Delaware physician to achieve this honor.

The Society holds an Annual Session, the Sessions and the Presidents, since 1921, rotating in the counties as follows: New Castle—Kent—New Castle—Sussex. At these Sessions many of the country's leading medical men have made addresses or read scientific papers. Its Transactions are published in the *Delaware State Medical Journal.* The membership as of December 31, 1949, totals 307.

The officers for 1949 are:

President, M. A. Tarumianz, Farnhurst.

1st Vice-President, Henry V'P. Wilson, Dover.

2nd Vice-President, Ervin L. Stambaugh, Lewes.

Secretary, Gerald A. Beatty, Wilmington.

Treasurer, Winfield W. Lattomus, Wilmington.

Executive Secretary, W. Edwin Bird, Wilmington.

The officers for 1950 will be:

President, Carl B. Scull, Dover.

President-elect, Charles E. Wagner, Wilmington.

Vice-President, Lawrence L. Fitchett, Milford.

Secretary, Andrew M. Gehret, Wilmington.

Treasurer, Joseph M. Messick, Wilmington.

Executive Secretary, W. Edwin Bird, Wilmington.

## Woman's Auxiliary

The Woman's Auxiliary to the Medical Society of Delaware was organized at Farnhurst on December 10, 1929, with the following officers:

President, Mrs. Robert W. Tomlinson, Wilmington.

## PRESIDENTS OF THE MEDICAL SOCIETY OF DELAWARE

| | |
|---|---|
| 1789-1822—James Tilton | Dover |
| 1822-1823—James Sykes | Dover |
| 1823-1824—Arnold Naudain | Leipsic |
| 1824-1828—Allen McLane | Wilmington |
| 1828-1829—Arnold Naudain | Leipsic |
| 1829-1830—Allen McLane | Wilmington |
| 1830-1832—James P. Lofland | Milford |
| 1832-1834—William W. Morris | Dover |
| 1834-1835—Joshua F. Vaughan | Wilmington |
| 1835-1841—James Couper, Jr. | New Castle |
| 1841-1843—James W. Thompson | Wilmington |
| 1843-1845—James Couper, Jr. | New Castle |
| 1845-1849—William W. Morris | Dover |
| 1849-1851—John D. Perkins | Smyrna |
| 1851-1855—Henry F. Askew | Wilmington |
| 1855-1856—James R. Mitchell | Milford |
| 1856-1857—John Merritt | Middletown |
| 1857-1858—Isaac N. Jump | Dover |
| 1858-1859—Robert R. Porter | Wilmington |
| 1859-1860—Edward D. Dailey | Smyrna |
| 1860-1861—Lewis P. Bush | Wilmington |
| 1861-1862—Gove Saulsbury | Dover |
| 1862-1863—James F. Wilson | Wilmington |
| 1863-1864—William Hamilton | Odessa |
| 1864-1865—James Couper, Jr. | New Castle |
| 1865-1866—Albert Whiteley | Frederica |
| 1866-1867—James A. Draper | Wilmington |
| 1867-1868—Charles H. Richards | Georgetown |
| 1868-1869—John W. Sharp | Camden |
| 1869-1870—William Marshall | Georgetown |
| 1870-1871—Irving S. Vallandigham | St. Georges |
| 1871-1872—James E. Clawson | Smyrna |
| 1872-1873—Robert G. Ellegood | Concord |
| 1873-1874—Swithin Chandler | Hockessin |
| 1874-1875—Nathan Pratt | Milford |
| 1875-1876—Henry F. Askew | Wilmington |
| 1876-1877—John J. Black | New Castle |
| 1877-1878—William T. Collins | Smyrna |
| 1878-1879—Hiram R. Burton | Lewes |
| 1879-1880—John K. Kane | Wilmington |
| 1880-1881—Ezekiel Dawson | Frederica |
| 1881-1882—David Hall | Lewes |
| 1882-1883—Howard Ogle | Wilmington |
| 1883-1884—Robert W. Hargadine | Felton |
| 1884-1885—Charles H. Richards | Georgetown |
| 1885-1886—Read J. McKay | Wilmington |
| 1886-1887—George W. Marshall | Georgetown |
| 1887-1888—James A. Hopkins | Milton |
| 1888-1889—William T. Skinner | Glasgow |
| 1889-1890—James H. Wilson | Dover |
| 1890-1892—Joshua A. Ellegood | Wilmington |
| 1892-1893—Joseph H. Chandler | Centerville |
| 1893-1894—Ezekiel W. Cooper | Camden |
| 1894-1895—Joseph B. Waples | Georgetown |
| 1895-1896—Frank Belville | Delaware City |
| 1896-1897—William P. Orr, Jr. | Lewes |
| 1897-1898—Peter W. Tomlinson | Wilmington |
| 1898-1899—Beniah L. Lewis | Laurel |
| 1899-1900—O. D. Robinson | Georgetown |
| 1900-1901—Willard Springer | Wilmington |
| 1901-1902—Edward S. Dwight | Smyrna |
| 1902-1903—Robert B. Hopkins | Milton |
| 1903-1904—Henry G. M. Kollock | Newark |
| 1904-1905—Alexander Lowber | Wilmington |
| 1905-1906—John Palmer, Jr. | Wilmington |
| 1906-1907—John W. Clifton | Smyrna |
| 1907-1908—Joseph K. Frame | Millsboro |
| 1908-1909—Henry J. Stubbs | Wilmington |
| 1909-1910—Presley S. Downs | Dover |
| 1910-1911—G. Frank Jones | Georgetown |
| 1911-1912—Francis L. Springer | Christiana |
| 1912-1913—L. Augustus H. Bishop | Dover |
| 1913-1914—William P. Orr, Jr. | Lewes |
| 1914-1915—Henry W. Briggs | Wilmington |
| 1915-1916—George I. McKelway | Dover |
| *1916-1917—James Beebe | Lewes |
| *1917-1918—George W. K. Forrest | Wilmington |
| 1918-1919—Luther S. Conwell | Camden |
| *1919-1920—Harrison M. Manning | Seaford |
| 1920-1921—Joseph W. Bastian | Wilmington |
| 1921-1922—John W. James | Dover |
| *1922-1923—Dorsey W. Lewis | Middletown |
| *1924—J. Roscoe Elliott | Laurel |
| 1925—Joseph P. Wales | Wilmington |
| 1926—John B. Derrickson | Frederica |
| *1927—Harold L. Springer | Wilmington |
| 1928—Willie T. Jones | Laurel |
| *1929—W. Oscar LaMotte | Wilmington |
| *1930—Isaac J. MacCollum | Wyoming |
| 1931—George C. McElfatrick | Wilmington |
| *1932—Ulysses W. Hocker | Lewes |
| 1933—William H. Speer | Wilmington |
| *1934—Joseph S. McDaniel | Dover |
| *1935—Jerome D. Niles | Townsend |
| *1936—Joseph B. Waples, Jr. | Georgetown |
| 1937—Charles P. White | Wilmington |
| *1938—Clarence J. Prickett | Smyrna |
| *1939—Meredith I. Samuel | Wilmington |
| *1940—Bruce Barnes | Seaford |
| *1941—Emil R. Mayerberg | Wilmington |
| *1942—William Marshall, Jr. | Milford |
| *1943—Lawrence J. Jones | Wilmington |
| *1944—Richard C. Beebe | Lewes |
| *1945—I. Lewis Chipman | Wilmington |
| *1946—Walter C. Deakyne | Smyrna |
| *1947—W. Edwin Bird | Wilmington |
| *1948—Howard S. Riggin | Seaford |
| *1949—M. A. Tarumianz | Farnhurst |
| *1950—Carl B. Scull, Jr. | Dover |
| *1951—Charles E. Wagner | Wilmington |

*Living, December, 1949.

Vice-President, Mrs. Joseph S. McDaniel, Dover.

Vice-President, Mrs. William P. Orr, Jr., Lewes.

Secretary, Mrs. Lawrence J. Jones, Wilmington.

Treasurer, Mrs. M. A. Tarumianz, Farnhurst.

At the end of the first year the membership was seventy, and they had a delegate to the National Auxiliary. Mrs. Tomlinson, the first President of the State Auxiliary, was President of the National Auxiliary (organized in Texas in 1923) in 1934-1935. Component County Auxiliaries are organized in New Castle County, with Mrs. Roger B. Thomas, Wilmington, as President and 151 members, and in Sussex County, with Mrs. George M. Van Valkenburg, Seaford, as President and 25 members. Kent County is not organized, but has 9 members at large.

Today the Auxiliary has 185 members, and the officers for 1949-50 are:

President, Mrs. J. Leland Fox, Seaford.

President-elect, Mrs. Joseph M. Messick, Wilmington.

Recording Secretary, Mrs. Andrew M. Gehret, Wilmington.

Corresponding Secretary, Mrs. Charles M. Moyer, Laurel.

Treasurer, Mrs. Sylvester W. Rennie, Wilmington.

## New Castle County Medical Society

It is not clear just when the physicians of Wilmington or New Castle County organized a society on a city or county basis. The earliest records available to us concerning this point are the Transactions of the American Medical Association which was founded in 1847 and which held its first convention in 1848. These Transactions, Volume 1, 1848, show that delegates from Delaware were seated representing the Medical Society of Delaware and the "Medical Association of Wilmington". Volume 2, 1849, includes delegates from the Medical Society of Delaware, the Medical Association of Wilmington, and the "New Castle County Medical Society."

Hence, at that time there were two medical societies in New Castle County, one presumably for the physicians within the city limits and the other for those without. The date of organization, officers, meetings, etc., of neither of these is available. From the first A. M. A. convention of 1848 to that of 1860, inclusive, the Medical Society of Delaware was represented every year except 1854, 1856, and 1857, or ten times. During this same period the Medical Association of Wilmington was represented nine times, while the New Castle County Medical Society was represented six times. Thus, even before the founding of the national society, this county had two societies, both apparently very much alive. We are unable to learn just when the city Association was merged with the County Society.

We republish[11] herewith a Fee Bill adopted by the "Medical Association of Wilmington, Delaware." This fee bill is not dated, but is probably about 1850, and we believe that it antedates the Fee Bill, also herewith republished[11], of the Kent County Medical Society, which is dated, August 2, 1854, and for the following reasons:

*First,* a Fee Bill is more likely to originate in a metropolitan area than in a rural one. *Second,* the pioneer Bill in this state, which this one probably is, could very well be undated—they simply did not think of that. *Third,* the Bill does not contain the names of the members; that idea probably came later. *Fourth,* the operation for "hare" lip is spelled "hair," and was corrected when the Kent Bill was printed later. Finally, it does not contain the imprint of the printer. Further trace of this "Medical Association of Wilmington, Delaware" is lost beyond the year 1860.

The onset of the Civil War caused the abandonment of the national conventions of 1861 and 1862, but they were resumed in 1863, in which year Delaware was represented solely by the Medical Society of Delaware. Thus, from 1860 on, no county or city societies were represented, and a few years later the American Medical Association revamped its constitution so that only the state societies sent representatives to its House of Delegates, which system is still in effect.

The County Society had an up-and-down existence from 1860 till 1880, when it became more active for a decade, then quiescent for another decade. Finally, in the autumn of 1901 it was reorganized, with Dr. Willard Springer as President, and Dr. Joseph W. Bastian as Secretary, and a roster of forty-five members. This Society was incorporated on November 4, 1921. It meets monthly in the building of the Delaware Academy of Medicine, Wilmington, and now has a membership of 241. The 1949 officers, all of Wilmington, are:

President, C. Leith Munson.

President-Elect, Robert O. Y. Warren.

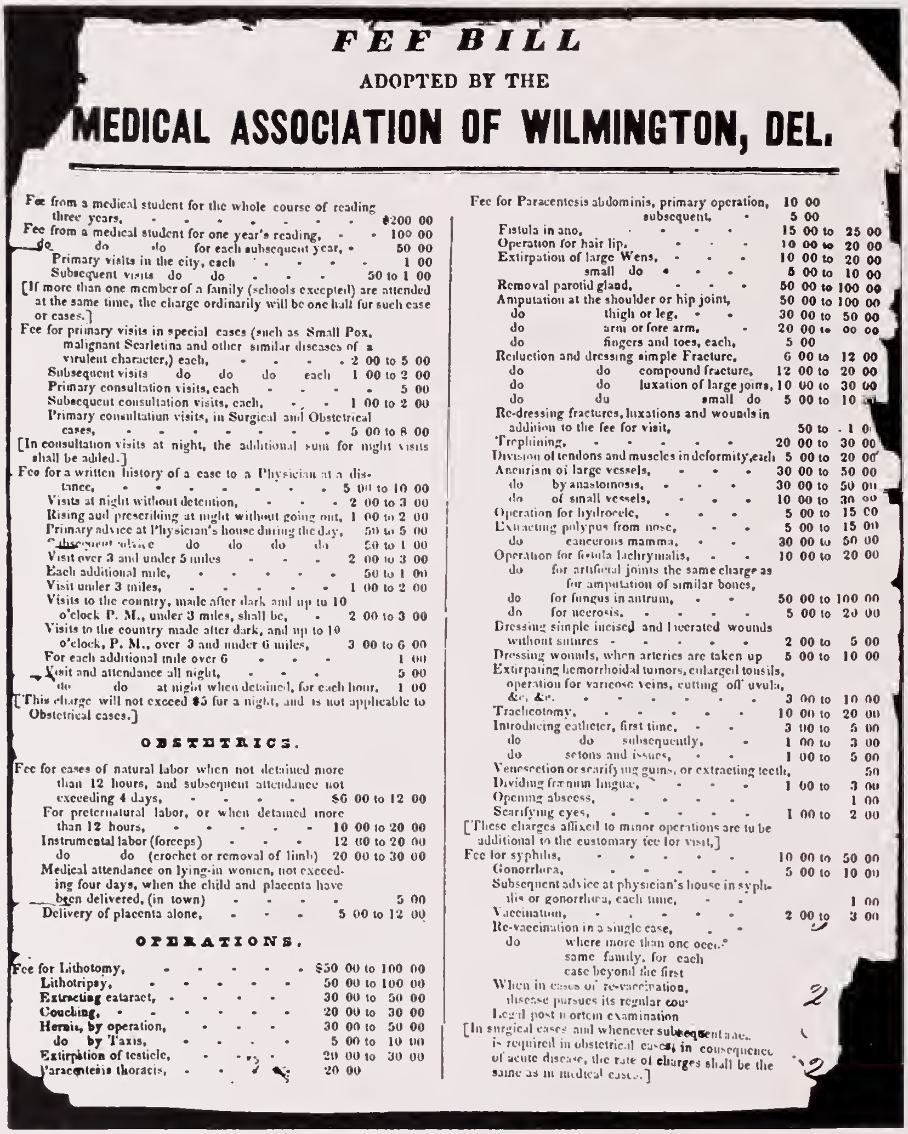
Vice-President, Allen D. King.

Secretary, Dana D. Burch.

Treasurer, Charles Levy.

## Kent County Medical Society

The Kent County Medical Society, as stated above, was old enough in 1854 to have set up a Fee Bill. Its exact date of founding is not known, but at the time of the Fee Bill it had enrolled thirty members. It sent delegates to the conventions of the American Medical Association in 1855 and 1858. It



# FEE BILL

ADOPTED BY THE

# MEDICAL ASSOCIATION OF WILMINGTON, DEL.

| | |
|---|---|
| Fee from a medical student for the whole course of reading three years, | $200 00 |
| Fee from a medical student for one year's reading, | 100 00 |
| do do do for each subsequent year, | 50 00 |
| Primary visits in the city, each | 1 00 |
| Subsequent visits do do | 50 to 1 00 |

[If more than one member of a family (schools excepted) are attended at the same time, the charge ordinarily will be one half for such case or cases.]

| | |
|---|---|
| Fee for primary visits in special cases (such as Small Pox, malignant Scarletina and other similar diseases of a virulent character,) each, | 2 00 to 5 00 |
| Subsequent visits do do do each | 1 00 to 2 00 |
| Primary consultation visits, each | 5 00 |
| Subsequent consultation visits, each, | 1 00 to 2 00 |
| Primary consultation visits, in Surgical and Obstetrical cases, | 5 00 to 8 00 |

[In consultation visits at night, the additional sum for night visits shall be added.]

| | |
|---|---|
| Fee for a written history of a case to a Physician at a distance, | 5 00 to 10 00 |
| Visits at night without detention, | 2 00 to 3 00 |
| Rising and prescribing at night without going out, | 1 00 to 2 00 |
| Primary advice at Physician's house during the day, | 50 to 5 00 |
| Subsequent advice do do do do | 50 to 1 00 |
| Visit over 3 and under 5 miles | 2 00 to 3 00 |
| Each additional mile, | 50 to 1 00 |
| Visit under 3 miles, | 1 00 to 2 00 |
| Visits to the country, made after dark and up to 10 o'clock P. M., under 3 miles, shall be, | 2 00 to 3 00 |
| Visits to the country made after dark, and up to 10 o'clock, P. M., over 3 and under 6 miles, | 3 00 to 6 00 |
| For each additional mile over 6 | 1 00 |
| Visit and attendance all night, | 5 00 |
| do do at night when detained, for each hour, | 1 00 |

[This charge will not exceed $5 for a night, and is not applicable to Obstetrical cases.]

## OBSTETRICS.

| | |
|---|---|
| Fee for cases of natural labor when not detained more than 12 hours, and subsequent attendance not exceeding 4 days, | $6 00 to 12 00 |
| For preternatural labor, or when detained more than 12 hours, | 10 00 to 20 00 |
| Instrumental labor (forceps) | 12 00 to 20 00 |
| do do (crochet or removal of limb) | 20 00 to 30 00 |
| Medical attendance on lying-in women, not exceeding four days, when the child and placenta have been delivered, (in town) | 5 00 |
| Delivery of placenta alone, | 5 00 to 12 00 |

## OPERATIONS.

| | |
|---|---|
| Fee for Lithotomy, | $50 00 to 100 00 |
| Lithotripsy, | 50 00 to 100 00 |
| Extracting cataract, | 30 00 to 50 00 |
| Couching, | 20 00 to 30 00 |
| Hernia, by operation, | 30 00 to 50 00 |
| do by Taxis, | 5 00 to 10 00 |
| Extirpation of testicle, | 20 00 to 30 00 |
| Paracentesis thoracis, | 20 00 |
| Fee for Paracentesis abdominis, primary operation, | 10 00 |
| subsequent, | 5 00 |
| Fistula in ano, | 15 00 to 25 00 |
| Operation for hair lip, | 10 00 to 20 00 |
| Extirpation of large Wens, | 10 00 to 20 00 |
| small do | 5 00 to 10 00 |
| Removal parotid gland, | 50 00 to 100 00 |
| Amputation at the shoulder or hip joint, | 50 00 to 100 00 |
| do thigh or leg, | 30 00 to 50 00 |
| do arm or fore arm, | 20 00 to 00 00 |
| do fingers and toes, each, | 5 00 |
| Reduction and dressing simple Fracture, | 6 00 to 12 00 |
| do do compound fracture, | 12 00 to 20 00 |
| do do luxation of large joints, | 10 00 to 30 00 |
| do do small do | 5 00 to 10 |
| Re-dressing fractures, luxations and wounds in addition to the fee for visit, | 50 to 1 0 |
| Trephining, | 20 00 to 30 00 |
| Division of tendons and muscles in deformity, each | 5 00 to 20 00 |
| Aneurism of large vessels, | 30 00 to 50 00 |
| do by anastomosis, | 30 00 to 50 00 |
| do of small vessels, | 10 00 to 30 00 |
| Operation for hydrocele, | 5 00 to 15 00 |
| Extracting polypus from nose, | 5 00 to 15 00 |
| do cancerous mamma, | 30 00 to 50 00 |
| Operation for fistula lachrymalis, | 10 00 to 20 00 |
| do for artificial joints the same charge as for amputation of similar bones, | |
| do for fungus in antrum, | 50 00 to 100 00 |
| do for necrosis, | 5 00 to 20 00 |
| Dressing simple incised and lacerated wounds without sutures | 2 00 to 5 00 |
| Dressing wounds, when arteries are taken up | 5 00 to 10 00 |
| Extirpating hemorrhoidal tumors, enlarged tonsils, operation for varicose veins, cutting off uvula, &c. &c. | 3 00 to 10 00 |
| Trachcotomy, | 10 00 to 20 00 |
| Introducing catheter, first time, | 3 00 to 5 00 |
| do do subsequently, | 1 00 to 3 00 |
| do setons and issues, | 1 00 to 5 00 |
| Venesection or scarifying gums, or extracting teeth, | 50 |
| Dividing frænum linguæ, | 1 00 to 3 00 |
| Opening abscess, | 1 00 |
| Scarifying eyes, | 1 00 to 2 00 |

[These charges affixed to minor operations are to be additional to the customary fee for visit,]

| | |
|---|---|
| Fee for syphilis, | 10 00 to 50 00 |
| Gonorrhœa, | 5 00 to 10 00 |
| Subsequent advice at physician's house in syphilis or gonorrhœa, each time, | 1 00 |
| Vaccination, | 2 00 to 3 00 |
| Re-vaccination in a single case, | |
| do where more than one occ same family, for each case beyond the first | |
| When in cases of re-vaccination, disease pursues its regular cou | 2 |
| Legal post mortem examination | |

[In surgical cases and whenever subsequent atte is required in obstetrical cases, in consequence of acute disease, the rate of charges shall be the same as in medical cases.]

A copy of this originol print is preserved in the librory of the Delowore Acodemy of Medicine, Wilmington.

meets monthly, in Dover, and has a roster of 24 members. The 1949 officers are:

President, Stanley Worden, Dover.

Vice-President, Robert R. Layton, Dover.

Secretary-Treasurer, Clarence J. Prickett, Smyrna.

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### SUSSEX COUNTY MEDICAL SOCIETY

The Sussex County Medical Society was organized at Georgetown, December 15, 1863, with Dr. William H. Wolfe, of Milton, as President, and Dr. William Marshall, of Milford, as Secretary. The Society meets monthly and today it enrolls 42 physicians. Its 1949 officers are:

President, John W. Lynch, Seaford.

Vice-President, James E. Marvil, Laurel.

Secretary-Treasurer, Leslie M. Dobson, Milford.

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### HOMEOPATHIC MEDICAL SOCIETY OF DELAWARE AND THE PENINSULA

Homeopathy was introduced in Delaware in 1839 by Dr. J. C. Gosewich. This school, founded (cir. 1810) by Christian Friederick Samuel Hahnemann (1755-1843) in Germany, and based on the doctrines of "similia similibus curantur" and "high potency",* had a

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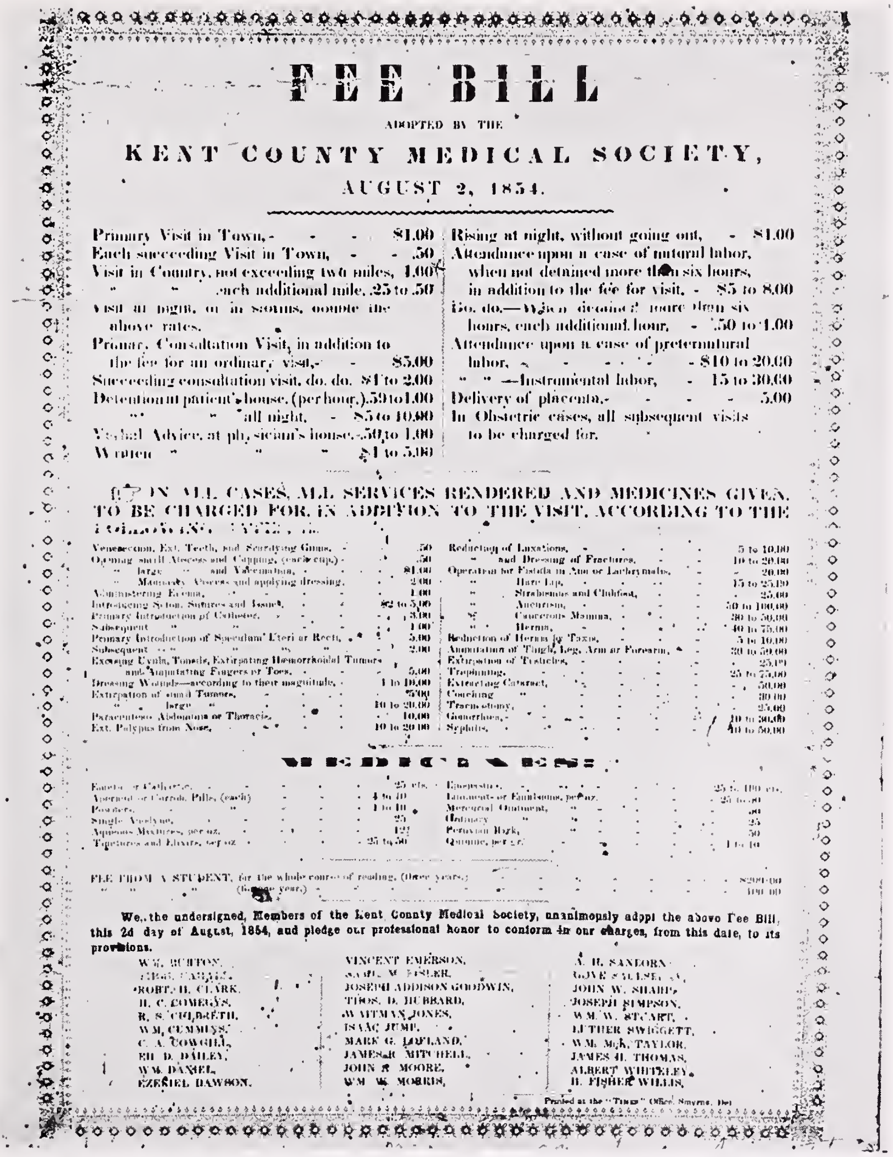
*Hahnemann's real contribution to medicine was the introduction of the small dose.



# FEE BILL

ADOPTED BY THE

## KENT COUNTY MEDICAL SOCIETY,

AUGUST 2, 1854.

| | | | |
|---|---|---|---|
| Primary Visit in Town, | $1.00 | Rising at night, without going out, | $1.00 |
| Each succeeding Visit in Town, | .50 | Attendance upon a case of natural labor, when not detained more than six hours, in addition to the fee for visit, | $5 to 8.00 |
| Visit in Country, not exceeding two miles, | 1.00 | Do. do.—When detained more than six hours, each additional hour, | .50 to 1.00 |
| " " each additional mile, | .25 to .50 | Attendance upon a case of preternatural labor, | $10 to 20.00 |
| Visit at night, or in storms, double the above rates. | | " " —Instrumental labor, | 15 to 30.00 |
| Primary Consultation Visit, in addition to the fee for an ordinary visit, | $5.00 | Delivery of placenta, | 5.00 |
| Succeeding consultation visit, do. do. | $1 to 2.00 | In Obstetric cases, all subsequent visits to be charged for. | |
| Detention at patient's house, (per hour,) | .50 to 1.00 | | |
| " " all night, | $5 to 10.00 | | |
| Verbal Advice, at physician's house, | .50 to 1.00 | | |
| Written " " | $1 to 5.00 | | |

☞ IN ALL CASES, ALL SERVICES RENDERED AND MEDICINES GIVEN, TO BE CHARGED FOR, IN ADDITION TO THE VISIT, ACCORDING TO THE [illegible]

| | | | |
|---|---|---|---|
| Venesection, Ext. Teeth, and Scarifying Gums, | .50 | Reducing of Luxations, | 5 to 10.00 |
| Opening small Abscess and Cupping, (each cup) | .50 | " and Dressing of Fractures, | 10 to 20.00 |
| " large " and Vaccination, | $1.00 | Operation for Fistula in Ano or Lachrymalis, | 20.00 |
| " Mammary Abscess and applying dressing, | 2.00 | " Hare Lip, | 15 to 25.00 |
| Administering Enema, | 1.00 | " Strabismus and Clubfoot, | 25.00 |
| Introducing Seton, Sutures and Issues, | $2 to 5.00 | " Aneurism, | 50 to 100.00 |
| Primary Introduction of Catheter, | 3.00 | " Cancerous Mamma, | 30 to 50.00 |
| Subsequent " " | 1.00 | " Hernia, | 40 to 75.00 |
| Primary Introduction of Speculum Uteri or Recti, | 5.00 | Reduction of Hernia by Taxis, | 5 to 10.00 |
| Subsequent " " " | 2.00 | Amputation of Thigh, Leg, Arm or Forearm, | 20 to 50.00 |
| Excising Uvula, Tonsils, Extirpating Hemorrhoidal Tumors and Amputating Fingers or Toes, | 5.00 | Extirpation of Testicles, | 25.00 |
| Dressing Wounds—according to their magnitude, | 1 to 10.00 | Trephining, | 25 to 75.00 |
| Extirpation of small Tumors, | 5.00 | Extracting Cataract, | 50.00 |
| " large " | 10 to 20.00 | Couching " | 30.00 |
| Paracentesis Abdominis or Thoracis, | 10.00 | Tracheotomy, | 25.00 |
| Ext. Polypus from Nose, | 10 to 20.00 | Gonorrhea, | 10 to 30.00 |
| | | Syphilis, | 10 to 50.00 |

[illegible]

| | | | |
|---|---|---|---|
| Emetic or Cathartic, | 25 cts. | Epispastics, | 25 to 100 cts. |
| Aperient or [illegible] Pills, (each) | 4 to 10 | Liniments or Emulsions, per oz. | 25 to 50 |
| Powders, " | 1 to 10 | Mercurial Ointment, " | .50 |
| Single Anodyne, | 25 | Ordinary " | 25 |
| Aqueous Mixtures, per oz. | 12½ | Peruvian Bark, " | 50 |
| Tinctures and Elixirs, per oz. | 25 to 50 | Quinine, per gr. | 1 to 10 |

| | |
|---|---|
| FEE FROM A STUDENT, for the whole course of reading, (three years,) | $200.00 |
| " " (single year,) | 100.00 |

**We, the undersigned, Members of the Kent County Medical Society, unanimously adopt the above Fee Bill, this 2d day of August, 1854, and pledge our professional honor to conform in our charges, from this date, to its provisions.**

WM. BURTON,
[illegible]
ROBT. H. CLARK,
H. C. COMEGYS,
R. S. CULBRETH,
WM. CUMMINS,
C. A. COWGILL,
ELI D. DAILEY,
WM. DANIEL,
EZEKIEL DAWSON,

VINCENT EMERSON,
SAML. M. FISLER,
JOSEPH ADDISON GOODWIN,
THOS. D. HUBBARD,
WAITMAN JONES,
ISAAC JUMP,
MARK G. LOFLAND,
JAMES R. MITCHELL,
JOHN R. MOORE,
WM. W. MORRIS,

A. H. SANBORN,
GOVE SAULSBURY,
JOHN W. SHARP,
JOSEPH SIMPSON,
WM. W. STUART,
LUTHER SWIGGETT,
WM. McK. TAYLOR,
JAMES H. THOMAS,
ALBERT WHITELEY,
H. FISHER WILLIS,

Printed at the "Times" Office, Smyrna, Del.

A copy of this original print is preserved in the library of the Delaware Academy of Medicine, Wilmington.

vicarious existence there and by 1850 had passed its peak in the land of its birth. It was introduced in the United States in the early 1800's, and had a struggle for recognition till the Civil War, when it made a very creditable showing and became accepted throughout the United States shortly thereafter. In 1876 there were in Delaware about twenty homeopathic physicians. In 1883, after two unsuccessful attempts, the Homeopathic Medical Society of Delaware and the Peninsula was organized. It holds an annual meeting in Wilmington. Today the Society enrolls 30 members. The officers for 1949-50 are: President, Martin B. Pennington.

Secretary, Victor D. Washburn.
Treasurer, A. King Lotz.

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### DELAWARE ACADEMY OF MEDICINE

For the first twenty-five years after the turn of the century, with the increase in the number of physicians in and around Wilmington, the need for a central meeting place, and especially for an adequate medical library, was felt more and more. The movement to procure such facilities led to the incorporating, in February, 1930, of the Delaware Academy of Medicine.

Prominent in the founding of the Academy were the following sixteen physicians:

Julian Adair
Olin A. Allen
Joseph M. Barsky
W. Edwin Bird
J. Draper Brown
Lewis G. Flinn
George W. K. Forrest
William H. Kraemer
W. Oscar LaMotte
Emil R. Mayerberg
John H. Mullin
W. Morris Pierson
James G. Spackman
Albert J. Strikol
Charles E. Wagner
Victor D. Washburn

Not long after the Academy was organized a group of public-spirited citizens, led by Mrs. Henry B. Thompson and Mrs. Ernest du Pont, became interested in preserving the old Bank of Delaware building at Sixth and Market Streets, founded in 1795 and built in 1815, and the second oldest bank building in the United States in continuous usage, which was about to be razed to make room for the new building of the Delaware Power and Light Company. The Bank was absorbed by the Security Trust Company in 1929. To do this the "Old Bank Building Association" was formed, whose sole purpose was to remove the old bank to its present site, at Lovering Avenue and Union Street, rebuild it, and present it with a clear title to the Academy. This was done, with the exception of a few minor interior alterations. The original hand-hewn rafters joined with wooden pegs, the staircase, floors and trim, and the railing surrounding the building have been preserved and appear as they were in 1815, a classical example of Georgian architecture. The Academy contains the only well-equipped medical and dental library in Delaware, the bound volumes being in excess of 2500, and the current periodicals, domestic and foreign, in excess of 135, together with several thousand unbound pamphlets and reprints. In addition, there is an inter-library loan service, both domestic and foreign, which makes available the whole of medical and dental literature. The Academy is conservatively valued at $80,000, and has an endowment of $30,000. Its roster shows as members 153 physicians and 25 dentists. The present officers, all of Wilmington, are:

President, Bartholomew M. Allen, M. D.

1st Vice-President, W. Morris Pierson, M. D.

2nd Vice-President, Robert R. Wier, D. D. S.

Secretary, Andrew M. Gehret, M. D.
Treasurer, Irvine M. Flinn, M. D.
Librarian, E. C. Skyrowatka, LL. D.

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### MEDICAL LICENSURE

Medical licensure in Delaware was not subject to legislative control until 1819. Prior to that time physicians either graduated from a recognized medical school authorized to grant the degree of doctor of medicine, or they "read medicine" in the office of a physician preceptor for a term of three years, and if their character and education were deemed satisfactory by said preceptor the young candidate began his practice.

On January 29, 1819, an act of the legislature entitled; "An Act to Regulate the Practice of Medicine and Surgery in this State", named five physicians from each of the three counties and stated that "they hereby appointed and constituted a board of examiners to be denominated the Medical Board of Examiners for the State of Delaware, to hold said appointment for the space of three years." Vacancies and reappointments were to be made by the General Assembly. The act further provided that "they shall have the power of granting licenses for the practice of medicine and surgery within this state, and they are hereby authorized and required to grant such licenses under the hand and seal of the President and Secretary of said board, to any person or persons applying for the same, who shall, on the production of a diploma from some reputable college of medicine, or from a full, strict, and impartial examination be deemed adequate to the practice of medicine and surgery."

The Act still further provided "that it shall be lawful for any three members of the aforesaid board of examiners for the time being, upon application to them, of any person whose design it may be to commence the practice of medicine and surgery within the state, to grant such person, so applying as aforesaid, a certificate permitting such applicant to practice medicine and surgery until the next annual meeting of the board and no longer. Provided that no such certificate be granted to the same person more than once."

This Act became known as the "Medical Practice Act", and its successors and amendments are still cited under that title.

This original Act was repealed February 4, 1822 and was replaced by a new Act which authorized the Society to appoint the members of the Board, in whatever numbers the Society should determine. The other provisions were substantially the same as in the original Act. The law then underwent further amendments in 1835, 1843, 1845, and 1847.

On April 19, 1883 a new Act appeared, apparently repealing all previous Acts. The important change made in the new law was that only graduates of a reputable medical college were allowed to practice. This brought an end to the old practice of "reading medicine" in a preceptor's office.

On April 18, 1895 an entirely new medical law was enacted, creating two Boards of Medical Examiners, one to represent the "President and Fellows of the Medical Society of Delaware", the other to represent the "Homeopathic Medical Society of Delaware and the Peninsula". Each Board was composed of five members appointed by the Governor, for two year terms, from the lists of members submitted to him by the respective societies. The respective Boards conduct the examinations and recommend the licensing of successful applicants to the Medical Council, which is composed of the President of the Regular Board, the President of the Homeopathic Board, and the Chief Justice of the state. The actual licensing body, then, is the Medical Council, which issues to the applicant a warrant for a license, which is then presented to the Clerk of the Peace in the county where the physician proposes to practice, the Clerk then issuing the actual definitive license, which must be registered annually.

On March 25, 1907 the Act was amended to provide for the examination and licensing of osteopaths. The osteopaths had to conform to the requirements exacted of regular practitioners with respect to general education, and had to be graduates of a school of osteopathy approved by the Medical Council. The osteopaths are examined by the Regular Board in all subjects except osteopathic therapeutics, which examination is given by a member of their own school, selected by the Council.

The amendments of 1907 also included a broad and comprehensive definition of the term "practice of medicine" which definition* is still considered by Legal Department of the American Medical Association to be one of the best in the United States.

Other amendments were made in 1925, 1933, 1937, 1939, and 1943, chiefly concerning details of application, examination, procedure, etc.

Excepting during the emergency of World War II, examinations are held twice a year, in January and in July; in the following subjects: anatomy, physiology, hygiene, chemistry, surgery, obstetrics and gynecology, pathology, diagnosis, practice of medicine, and materia medica and therapeutics. The passing grade is 75 in each subject.

The present officials are:

Medical Council—President, Hon. Charles S. Richards, Georgetown; Secretary, Joseph

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*Revised Code of Delaware, 1947, Chapter 27, Section 18: For the purpose of this Chapter, the words "practice of medicine or surgery" shall mean to open an office for such purpose, or to announce to the public or to any individual, in any way, a desire or willingness or readiness to treat the sick or afflicted in any County in the State of Delaware, or to investigate or diagnosticate, or to offer to investigate or diagnosticate any physical or mental ailment, or disease or disease of any person, or to give surgical assistance to, or to suggest, recommend, prescribe or direct for the use of any person any drug, medicine, appliance or other agency, whether material or not material, for the cure, relief or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture, or bodily injury, or deformity, after having received or with intent of receiving therefor, either directly or indirectly, any money, gift, or any other form of compensation. It shall also be regarded as practicing medicine within the meaning of this Chapter if anyone shall use in connection with his or her name, the words or letters Dr., Doctor, Professor, M. D., M. B., or Healer, or any other title, word, letter or other designation which may imply or designate him or her as a practitioner of medicine, or surgery, in any of its branches; provided that nothing in this Chapter shall be construed to apply to the administration of domestic or family remedies in cases of emergency, or to dentists or dental surgeons in the practice of dentistry, or to surgeons of the United States Army or Navy in the discharge of their official duties, or to prevent the mechanical application of glasses; and provided further that nothing contained in this Chapter shall prevent opticians for preparing eyes for testing or testing eyes and fitting glasses to correct vision, or to prevent druggists practicing pharmacy according to the existing laws, or to prevent the treatment of corns or bunions or the business of maincuring or the practice of massage.

S. McDaniel, Dover; Wallace M. Johnson, Newark.

Regular Board—Joseph S. McDaniel, Dover; William Marshall, Jr., Milford; W. Edwin Bird, Wilmington; James E. Marvil, Laurel; Lawrence J. Jones, Wilmington.

Homeopathic Board—Wallace M. Johnson, Newark; A. King Lotz, Wilmington; John C. Pierson, Wilmington; F. Earl Spencer, Wilmington; H. Wendell Gray, Wilmington.

### MEDICAL JOURNALISM

It was a Delaware doctor, Edward Miller of Dover, one of the incorporators of the Medical Society of Delaware and its first secretary, who moved to New York City in 1796 and in 1797, in collaboration with Drs. Samuel I. Mitchill and Elihu Smith, established the *Medical Repository,* (1797-1824) the first medical journal to be published in the United States.

Medical journalism in Delaware began in 1798 when there appeared the *Wilmington Mercury,* "published occasionally and delivered gratis to the patrons of the *Delaware Gazette,* by Smith." This was a one-page leaflet supplement and recorded chiefly the deaths from the smallpox, an epidemic of which was then raging here, along with other pertinent medical news. Just when this *Mercury* began and ended is not certain, but seven issues, extending from September 20, 1798 to October 22, 1798 are extant[12].

Next come the *Transactions* (or Proceedings) *of the Medical Society of Delaware,* together with many of the Presidential Addresses, in booklet form. For the period from 1789 to 1899 less than half of these Transactions are extant[12], a regrettable historical loss. The Medical Society of New Jersey has published its Transactions from 1766 to date, without a single gap.

In September, 1899 there appeared the first issue of the *Bulletin of the Pathological and Bacteriological Laboratory* of the Delaware State Board of Health, then located at Newark, with Dr. Albert Robin as editor. This *Bulletin* was issued monthly in booklet form. Dr. Robin resigned as editor at the end of 1903 and was succeeded by Herbert J. Watson, till the end of 1912, after which it was apparently discontinued, the archives of the State Board of Health showing no issues after that date.

The next effort in medical journalism was the *Journal of the New Castle County Medical Society.* The first issue, in November, 1908, was merely a notice of a meeting, in pamphlet form, and so Volume 1, Number 2, issued as a sixteen page booklet in February, 1909, was, according to the editorial, "their initial bow" as a county journal. This publication, a few issues of which have been preserved, was continued till December, 1909, with Dr. Harold L. Springer as editor, and Dr. Albert Robin as assistant editor.

In the meantime, October 11, 1909, the Medical Society of Delaware determined to establish an official organ, to be known as the *Journal of the Delaware State Medical Society.* It was further decided to print the Proceedings of the 1909 Session in the new *Journal,* replacing the usual separate booklet. However, instead of calling it incorrectly (the Society is legally the Medical Society of Delaware), as the resolution provided for, it was given the title of *Delaware State Medical Journal,* reverting inadvertently to the terminology of 1776. The infant *Journal of the New Castle County Medical Society* was absorbed, and Dr. Harold L. Springer was appointed the first editor, with Dr. Joseph W. Bastian as business manager. This *Journal,* no copies of which are available till that of September, 1915, first appeared in January, 1910, and was a monthly of 12-16 pages. Dr. Springer continued as editor until the end of 1911, when Dr. Albert Robin was made editor and served in that capacity to the end of 1915. By this time the *Journal* had grown to 16-20 pages, but still retained its booklet size.

In January, 1916, the present editor, Dr. W. Edwin Bird, began his term of service, which has now extended over a period of thirty-four years, and is exceeded in the field of state medical journalism only by Dr. Clarence A. Smith, of *Northwest Medicine* (Washington, Oregon, Idaho and Alaska), who has served for forty-six years. We had luncheon with Dr. Smith in Chicago in November, 1948, and rejoiced to find him still hale and hearty at 85.

During the World War I period the *Jour-*

*nal* was published as a booklet-sized quarterly from January, 1918 to December, 1922. Following this the *Delaware State Medical Journal* was combined with the *Pennsylvania Medical Journal* in January, 1923, and published again as a monthly under the title of the *Atlantic Medical Journal,* of standard size, with Dr. Frank C. Hammond, of Philadelphia, as editor, and Dr. Bird as assistant editor. The business details were conducted by our Pennsylvania confreres entirely, Dr. Bastian resigning as business manager in December, 1922. The hopes of the two states in merging their journals—that the *Atlantic* might become the organ of several nearby states, similar to *Northwest Medicine*—did not materialize, and the arrangement was cancelled with the issue of September 1928, each state having decided to resume publication of its own journal under its original title.

Thus a New Series of the *Delaware State Medical Journal* began in January, 1929, with Dr. Bird as editor and Dr. M. A. Tarumianz as business manager. The arrangement, style, and format of the new *Journal* is similar to that of the other state medical journals, and contains a page whose type face is 6 x 9 inches. Illustrations are frequently used. The *Journal* now runs 52-60 pages per issue, and is supported by the advertisements and a per capita assessment on the members of the Society. Volume 21 of the New Series began with the issue of January, 1949.

The *Journal* was also the official organ of the Delaware Pharmaceutical Society from April, 1929 till December, 1932, when the Delaware druggists affiliated with the *Maryland Pharmacist,* an organ more akin to their interests.

Despite the facts that Delaware is a small state and has no medical school, its *Journal,* which goes to the leading medical schools and libraries in America and in several foreign countries, evidently enjoys an excellent reputation, as is indicated by the number of requests that come from all over the world for reprints of articles published therein.

## Doctors at War

World War I found Delaware with approximately 265 doctors, 25 of whom were over 65 years of age or physically incapacitated. Of the remaining 240, 37 physicians, or fifteen per cent of those in practice, entered the services. Fortunately, there were no deaths among these, and they all returned to their civilian practices. In addition to these, 67 physicians served at home on the various examining boards. In this war the Delaware profession, by comparison with the records of other states, contributed slightly more than the average state, medically.

World War II found Delaware with 344 physicians, 39 of whom were over 65 years of age or physically incapacitated. Of the remaining 305, 109 entered the services, or 35 per cent of those in practice. At this writing we know of no other state that exceeded this percentage. In addition to these, 89 physicians served at home on the various examining boards.

The active response of the Delaware doctors to the call of duty in the services in World War II has been a matter of official commendation. All over the country the professional groups out-volunteered the lay groups, and the medical profession did appreciably better than any other professional group, the average medical response by states, being 126 per cent of its quota; Delaware's response was 152 per cent. In the six months from March to September, 1942, Delaware had thus contributed enough doctors to supply its quota for the rest of 1942 and for the entire year of 1943. By the early part of 1944, eight of the largest states, with an average deficit of 2000 each, that had been slow to meet their requirements, finally did so, bringing the number of physicians in the services up to the total then required. Thus, except for requests for five or six doctors to make certain replacements, which requests were refused by the Delaware Procurement and Assignment Service, Delaware was not called on to contribute any more physicians to the services during the war.

Of Delaware's 109 physicians in the services, 22 or approximately 20 per cent, recieved 25 decorations for gallantry in action or for bravery in the performance of duty, or were commended for outstanding professional skill or devotion to duty. This amazing record, not surpassed by any state, is a matter of deep pride on the part of the Delaware profession. The honors awarded were as follows,

2nd Lt. Rachel Hannah Sheridan

Capt. Donald Walker Cheff

MEDICAL CORPS CASUALTIES FROM DELAWARE IN WORLD WAR II

the rank given being that of the date of citation:

### Citations [13]

SHANDS, ALFRED R., JR., Colonel—Legion of Merit—June, 1944 to Oct., 1945

*BARSKY, JOSEPH M., Lt. Colonel—Legion of Merit—February 15, 1942 to February 18, 1943

STRADLEY, SHERMER H., JR., Captain—Legion of Merit—March 13, 1943 to August 26, 1944

DAVIDSON, DOUGLAS T., JR., Major—Silver Star—June 6, 1944

**CHEFF, DONALD W., Captain—Bronze Star—December 13, 1944, Purple Heart—December 31, 1944; Silver Star—April 16, 1945

SORTMAN, HAROLD P., Captain—Silver Star—July 12, 1943

STAT, SIDNEY, Captain—Silver Star—April 12, 1945

HUME, W. GARRETT, II, Captain—Soldier's Medal—April 9, 1945

ACKART, RICHARD J., Captain—Bronze Star—August 25, 1944; Two Oak Leaf Clusters, September 7, 1944, and February 7, 1945

BEATTY, GERALD A., Major—Bronze Star—March 22, 1945 to May 8, 1945

KELLEY, JAMES W., Major—Bronze Star—August 28, 1944 to May 8, 1945

MUNSON, C. LEITH, Major—Bronze Star—January-February, 1945

PENNOCK, THOMAS H., Major—Bronze Star—April 15, 1945 to May 5, 1945

STROUD, HENRY H., Major—Bronze Star—January 1945

SKURA, FRANK S., Captain—Bronze Star—September 8, 1944 to February 8, 1945

URIE, J. WILLIAM, Captain—Bronze Star—June 14-15, 1945; Purple Heart—May 17, 1945

WASHBURN, VICTOR D., Colonel—Commendation—August 17, 1942 to September 2, 1945

WARREN, ROBERT O. Y., Colonel—Commendation—November 2, 1944

BRIGGS, WARD W., Lt. Commander—Commendation—November, 1943 to November, 1944

MARTIN, JOHN P., Lt. Commander—Commendation—January 31, 1944 to February 11, 1944

POOLE, GERALD O., Lt. Commander—Commendation—June, 1944

RENNIE, SYLVESTER W., Major—Commendation—January 20, 1943 to January 27, 1943

| | |
|---|---|
| Legion of Merit | 3 |
| Silver Star | 4 |
| Soldier's Medal | 1 |
| Bronze Star | 9 |
| Purple Heart | 2 |
| Commendation | 6 |
| | 25 |

The only doctor from Delaware to lose his life in either World War was Captain Donald Walker Cheff. Captain Cheff was born in 1913, the son of Dr. Paul P. Cheff, of Grand Rapids, Michigan, and received his M. D. degree from the University of Nebraska in 1937. He then interned in the Delaware Hospital, Wilmington, for one year, following which he was resident physician at Brandywine Sanatorium, Marshallton, for 1½ years.

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*Died July 31, 1948.

**Killed in Action April 16, 1945.

He married Miss Elizabeth Cline, of Waynesboro, Pennsylvania, who was a laboratory technician at the Delaware Hospital.

Early in 1940 he began private practice, and was associated with Dr. Andrew M. Gehret, who also went into the Army. At that time he was a member of the staffs of the Delaware and Wilmington General Hospitals.

Captain Cheff was commissioned in June, 1942, one of the first Wilmington physicians to enter the service. He had his initial training with the 95th Division, but was transferred to the 77th Division, famous "Statue of Liberty Division," before going overseas, where he served as a commander of the 302nd Medical Battalion. This Division was shipped to the Pacific Theatre of Operations, and Captain Cheff took part in the invasions of Guam and of Leyte, where he was awarded the Bronze Star medal for action on December 13, 1944. During the intense fighting there his troops suffered so great a number of casualties that it was impossible for litter bearers to evacuate the wounded from the battalion aid station, because all roads to the rear had been cut off. There existed only a road across 300 yards of rice paddies, waist deep in water. Dr. Cheff obtained an amphibious tractor to cross the paddies, directed it to the aid station and fearlessly accompanied it to the front lines, where not a man had yet been treated.

After the Leyte action, with the men of the 77th Division he went to a small island off Okinawa on March 26, 1945, and shortly thereafter went to Okinawa. Later he went with the Division on to Ie Jima, where he was awarded the Silver Star medal for action on April 16, 1945, the day he lost his life. His citation states that he went with the platoon of his collecting company 25 minutes after H-hour and set up a collecting station on the beach. He led his litter bearers inland through heavy small arms fire and then returned to the beach, where he learned that casualties were mounting fast. By that time two ¼ ton ambulances had been landed. Although Captain Cheff had been informed that the road to his regiment was insecure, heavily mined, and under small arms fire, he led the ambulances to the battalion aid station. He evacuated eight casualties to the beach and then led the ambulances back and loaded them with eight more casualties. While proceeding back to the beach on this second trip the ambulance in which he was riding struck a mine, which killed all the occupants. Both the Bronze Star and the Silver Star medals were awarded posthumously in ceremonies held in Harrisburg, Pennsylvania, the medals being received by his wife and two children.

Dr. Cheff was buried on Ie Jima, there being but one grave intervening between his and that of Ernie Pyle*, the internationally famous war correspondent, who lost his life on the same island just two days after Captain Cheff was killed.

Dr. Cheff's name and services are memorialized by a rest camp named "Cheff Hall," in the Philippines, built by members of his 302nd Medical Battalion. He will be further memorialized by the "Dr. Donald M. Cheff Memorial Chapel" in the new Veteran's Administration Hospital at Oak Grove. His confreres at home have planned a living memorial—an endowment fund for the education of his children. The community he had adopted as his professional home will always remember the pleasing personality, the sterling character, and the professional proficiency of the only Delaware doctor to make the supreme sacrifice in war in over half a century.

### HOSPITALS

The excellent little volume by Dr. Samuel,[10] from which we have borrowed extensively, brought the history of Delaware's hospitals up to the summer of 1939, consequently we shall here mention the old ones only if we can add a note of historical or biographical interest, and then give a very brief summary of the new ones that have come into the picture since 1939.

### TILTON HOSPITAL

On July 8, 1862, the Delaware State Association for the Sick and Wounded Soldiers was organized. An office and repository were opened in the Institute Building, Eighth and Market Streets, Wilmington. Supplies of money, clothing and edibles were received. Committees were sent to the army camps and hospitals to ascertain the needs of the sick and wounded. The wounded from Delaware were, at that time, taken to the military hospital, Chester, Pennsylvania. Early in 1863, Miss Anna Semple, supervisor of military hospitals in the state, urged that a suitable building be acquired in Wilmington for hospital purposes. Ground was secured at Ninth and Tatnall Streets, and in thirty days a frame building was erected at a cost of $22,500. Later on, the entire block bounded by Ninth Street, Tatnall Street, Delaware Avenue, and West Street was utilized. Named for James Tilton, the first Surgeon-General of the Army (1813-1815) and first President of the Medical Society of Delaware, (1789-1822), it was ready to receive patients March 6, 1863. The staff included Drs. William R. Bullock, Gray, Norris, Macfarlan, and Johnson. The members of the Association for Sick and Wounded Soldiers were permitted by Edwin M. Stanton, Secretary of War, to remove the sick and wounded of the Delaware regiments from the battlefield at Gettysburg. Dr. Johnson, executive officer of the hospital, reported that the capacity was 350 beds, with only 78 patients in July 1863. By August, 1864 there were 380 beds and 241 patients. (Samuel, p. 173).

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*There was no better soldier than he (Ernie Pyle).- He sweated and suffered with infantrymen and more than anyone else helped America understand the heroism and sacrifices of its fighting men. He was a little guy who loved the little guy and he brought the front to the front door of every American home.—Bert Buchwach, president, Honolulu Press Club, at Pyle's reburial in Honolulu, July 4, 1949.

Mrs. Marjorie Bullock LeBoutillier, of Malvern, Pennsylvania, through the courtesy of Miss Gertrude Brinckle, librarian of the Historical Society of Delaware, gives us the following new note:

"During the Civil War, the U.S. 'Tilton Hospital' was at the N. W. corner of Ninth and Tatnall Streets. This was the birthplace of my grandfather, the late Dr. William R. Bullock. The grounds were extensive, and when occupied as a hospital embraced the block bounded by Ninth Street, Delaware Avenue, Tatnall, and West Streets, and took in fields to the west of West Street. The government occupied it as a hospital for the sick and wounded who were brought there from the seat of war. The plot was rented from Dr. Bullock and his brother Charles. Long hospital wards lettered from A to F stretched across the block and tents were used in the fields to the west for cases of gangrene. To celebrate the close of the War, Dr. Bullock, with the aid of some of the soldiers, made a fine display of fireworks which were set off in a lot to the north.

"Previous to the occupancy by the government, this place was occupied by Col. Theodore Hyatt, Senior, as a Military School. It was also the home of Dr. Bullock's father, John Bullock, who ran a 'Boarding School for Young men', which was subsequently removed to Chester, Pennsylvania, and named the Pennsylvania Military Academy.

"The contract with Dr. Bullock as a private physician was entered into June 3rd, 1863 at Philadelphia, between himself and Surgeon W. S. King, Medical Director of the United States Army. I have that contract. I always understood from my grandfather that he did most of the surgical work at 'Tilton' during the entire Civil War. A paper giving his discharge at the close of the War was dated July 17, 1865, and calls him 'Acting Assistant Surgeon' of the U. S. Army."

Shortly after the war ended this frame hospital was torn down[14] to make room for rows of brick dwellings, and by 1870 no vestige of it remained.

The name has been preserved by the U. S. Army, which designated its medical plant at Fort Dix, New Jersey, in World War II, as the "Tilton General Hospital." At the peak of its utilization it housed 5000 patients. A further item of local interest is that its Chaplain-in-Chief was Col. Park W. Huntington, pastor of St. Stephen's Lutheran Church, Wilmington.

### Alfred I. duPont Institute of the Nemours Foundation

Under the will of Mr. Alfred I. duPont, who died in 1935, there was established in 1937 the Nemours Foundation, a charitable corporation "for the care and treatment of crippled children, but not of incurables" with "first consideration being given to residents of Delaware." The original incorporators were Mrs. Alfred I. duPont, Elwood Ball, Col. R. S. Huidekoper, and the Florida National Bank.

Following the establishment of the Foundation, Mrs. Alfred I. duPont selected a Medical Advisory Board consisting of Drs. Thomas R. Brown, of Baltimore, (Chairman); De-

Witt B. Casler, of Baltimore; William Tate Graham, of Richmond; Michael Hoke, of Beauford, South Carolina; Robert B. Osgood, of Boston; Beverly R. Tucker of Richmond; and Philip D. Wilson, of New York City. This Board first met in March, 1937, and formulated the plans for the building of a hundred bed hospital and school for crippled children to be named the Alfred I. duPont Institute. The institution was to be located on the Alfred I. duPont estate, "Nemours," of two hundred acres, in Brandywine Hundred, one mile north of the city of Wilmington.

On July 1st, 1937, Dr. Alfred R. Shands, Jr., who was then Associate Professor of Surgery, in Charge of Orthopedics, at the Duke University School of Medicine, began his duties as Medical Director of this Foundation. The planning and construction of the Institute occupied three years. It was dedicated on June 14, 1941, but admitted its first patients on July 1, 1940. Miss Marie L. Des Barres, who had been assistant superintendent of the Shriners Hospital for Crippled Children in Montreal, was selected as the first superintendent. In addition to Dr. Shands, the original staff included Drs. Lee E. Farr, D. M. Angevine, and D. A. MacFadyen.

In the summer of 1941 the Research Division of the Institute, with laboratories equipped for pathology, bacteriology, biochemistry and experimental surgery, began full time operation with Dr. Lee E. Farr from the Rockefeller Hospital in New York City as Research Director. Drs. D. M. Angevine and D. A. MacFadyen were added to the original staff. Prior to the beginning of this activity in the Institute, the Foundation, between 1938 and 1941, had made grants from $1,000 to $2,500 to universities and hospitals for twenty-four research fellowships in work related to the problems of the crippled child.

In 1942, when the full-time Institute staff of eight doctors entered the Armed forces, the Research Division discontinued its activities. It is believed that no other hospital in the country gave every one of its full-time physicians to military service. The orthopedic work of the Institute, however, did not suffer, as it was taken over by Dr. A. Bruce Gill, Professor Emeritus of Orthopedic Surgery, of the University of Pennsylvania. It was necessary to close two of the four wards, and the average patient census dropped from 65 to 45.

During the fall of 1945 Drs. Shands and Farr returned to the Institute after separation from the Armed Forces. The comprehensive program of hospitalization, teaching, and research for the crippled child was reestablished, and by the fall of 1947 it was back to the point where it was when discontinued in the summer of 1942.

### WILLIAM L. NELSON MEMORIAL HOSPITAL

In 1945 the New Castle County Medical Society was instrumental in getting the Veterans Administration to take over certain barracks at the New Castle County Air Base, near New Castle, for a temporary hospital of 150 beds when that Base was abandoned by the Air Force.

In April, 1946 the VA purchased 32 acres on the Capital Trail at Oak Grove for a new eight-story hospital of 330 beds, which will be completed in February, 1950 and dedicated on March 12, 1950. Patients will not be admitted until next May or June. The magnificent new plant, which cost $7,000,000, is named in honor of Sgt. William L. Nelson, of Middletown, who was posthumously awarded the Congressional Medal of Honor. It will be managed by Dr. Major W. Gasper, who has been the manager of the VA hospital at the Airport for the past two years.

An addition is being built to the hospital to house the "Dr. Donald M. Cheff Memorial Chapel," adorned with an appropriate bronze plaque. Dr. Cheff was killed in action, on Ie Jima on April 16, 1945. (see p. 36). This will be a fitting tribute to the only Delaware doctor to lose his life in either World War I or World War II.

### GOVERNOR BACON HEALTH CENTER

Named for the Honorable Walter C. Bacon, Governor of Delaware from 1941 to 1949, is the Governor Bacon Health Center at Delaware City.

This represents an idea that Dr. M. A. Tarumianz, Superintendent of the Delaware State Hospital since 1926, has had for many years for a place where citizens in need of

## HOSPITALS AND RELATED INSTITUTIONS — 1946

| INSTITUTION | Approved | Type of Service | Ownership or Control | No. of Buildings | Value of Plant | Doctors On Staff | Nurses On Staff | Beds | Average Census | Bassinets | Births | Admissions | Year Opened |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Claymont—Woods Haven School | | Inst. | State | 1 | | 1 | 2 | 6 | 2 | 0 | 0 | 114 | '14 |
| Dover—Kent General Hospital | | Gen. | NPAssn | 3 | $220,000 | 20 | 14 | 60 | 53 | 10 | 402 | 1775 | '12 |
| Farnhurst—Del. State Hosp. | 1, 2, 3 | Ment. | State | 23 | 2,905,000 | 39 | 34 | 1250 | 1185 | 0 | 0 | 248 | '89 |
| Greenbank—New Castle Co. Workhouse | | Inst. | County | 1 | 100,000 | 4 | 0 | 12 | 3 | 0 | 0 | ? | '32 |
| Lewes—Beebe Hospital | 2, 3 | Gen. | NPAssn | 4 | 345,000 | 32 | 48 | 104 | 66 | 16 | 245 | 1783 | '16 |
| Marshallton—Brandy. Sanat. | | TB | State | 11 | 550,000 | 2 | 19 | 124 | 102 | 0 | 0 | 104 | '07 |
| Edgewood Sanat. | | TB | State | 3 | 200,000 | 1 | 7 | 68 | 52 | 0 | 0 | 49 | '14 |
| Sunnybrook Cottage | | TBchild | NPAssn | 2 | 20,000 | 1 | 1 | 24 | 21 | 0 | 0 | 7 | '19 |
| Middletown—Maternity Home | | Mat. | Indiv. | 2 | 30,000 | 5 | 4 | 20 | 20 | 10 | 70 | 120 | '34 |
| Milford—Milford Mem. Hosp. | 1, 2, 3 | Gen. | NPAssn | 2 | 155,000 | 24 | 44 | 100 | 53 | 19 | 375 | 2003 | '07 |
| Smyrna—Del. State Welfare Home | | Inst.Gen. | State | 5 | 500,000 | 10 | 5 | 378 | 371 | 7 | 0 | 168 | '33 |
| Stockley—Del. Colony | | Me Def | State | 10 | 425,000 | 6 | 2 | 500 | 510 | 0 | 2 | 44 | '21 |
| Wilmington— | | | | | | | | | | | | | |
| A. I. duPont Institute | 1, 2 | Orth.child | NPAssn | 2 | 1,000,00 | 20 | 20 | 85 | 50 | 0 | 0 | 125 | '40 |
| Florence Crittenton Mission | | Mat. | NPAssn | 1 | 50,000 | 2 | 2 | 15 | 10 | 8 | 35 | 45 | '97 |
| Delaware Hospital | 1, 2, 3 | Gen. | NPAssn | 1 | 4,000,000 | 154 | 312 | 368 | 272 | 50 | 1552 | 8486 | '90 |
| Doris Memorial Hospital | | Isol. | NPAssn | 1 | 205,000 | 190 | 18 | 30 | 15 | 0 | 0 | 314 | '32 |
| Ferris Indust. School | | Inst. | State | 1 | 10,000 | 1 | 1 | 10 | 2 | 0 | 0 | 30 | '40 |
| Gross Private Hospital | 2 | Gen. | Corp. | 1 | 75,000 | 10 | 6 | 15 | 12 | 6 | 190 | 483 | '35 |
| Memorial Hospital | 1, 2, 3 | Gen. | NPAssn | 3 | 1,680,000 | 162 | 169 | 210 | 159 | 38 | 907 | 4988 | '88 |
| Osteopathic Hospital | | Gen. | NPAssn | 1 | | | | 9 | | | | | '45 |
| St. Francis Hospital | 1, 2, 3 | Gen. | Church | 6 | 750,000 | 164 | 63 | 105 | 75 | 35 | 396 | 2057 | '24 |
| Wilmington General Hosp. | 1, 2, 3 | Gen. | NPAssn | 4 | 1,515,000 | 190 | 84 | 142 | 97 | 52 | 1197 | 3657 | '09 |
| Home of Merciful Rest | | | | | | | | | | | | | |

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1—By American Medical Association for training of interns
2—By American College of Surgeons for minimum standard
3—By State Board for training of nurses
4—Exclusive of newborn
5—Unit of Wilmington General Hospital
NPAssn—Non-profit Association

*Type of Service*
Child —Children
Chr. —Chronic
Gen. —General
Inst. —Institutional
Isol. —Isolation
Mat. —Maternity
Me Def.—Mental deficiency
Ment. —Mental
Orth. —Orthopedic
TB —Tuberculosis

certain help could get such help which our existing institutions could not offer.

In the winter of 1945 it became apparent that Ft. duPont with its installations and improvements would be placed on the Army surplus list, and in January 1946, it was made apparent that the Veterans Administration had finally decided not to use Fort duPont for a Veterans Hospital. Accordingly Governor Bacon, as President of the Delaware Post-War Planning Commission, made overtures to the government to secure this plant for the proposed Health and Welfare Center, to include eventually 600 beds. After due consideration the government through the Federal Works Administrator then transferred this property to the state of Delaware for health purposes. Ownership of the Fort duPont Reservation was formally transferred to the state of Delaware by the federal authorities at a ceremony in Legislative Hall in Dover on January 30, 1947.

When the Governor Bacon Health Center is in full operation it will encompass:

1. A department for the care and treatment of children between the ages of four

and sixteen years, who are either seriously maladjusted or mentally ill, and who are amenable to modern care and treatment.

2. A department for the many handicapped or crippled children of Delaware, including spastics and cardiacs and children afflicted with infantile paralysis.

3. A department for the detention of children awaiting trial in any court of the state having jurisdiction over dependent, neglected, delinquent or maladjusted children, for social, psychological and psychiatric study and examination.

4. A department for children awaiting assignment to foster homes.

5. A department for men and women of all ages who suffer from alcoholism, without psychosis.

6. A department for epileptics without psychosis.

7. A department for aged persons who are bedridden but without frank psychosis, and who need only nursing care.

8. An emergency hospital unit containing 250 beds for any statewide epidemic or major disaster.

The program at the Health Center is designed not to overlap with any service given anywhere else in the state of Delaware, nor is it designed to infringe upon the field of any other agency in the state.

The philosopsy of the Health Center is to serve the welfare of the people—a preventive psychiatric hospital that conserves human welfare.

It is not a charity institution. Those who can pay for services, will be asked to pay, within their ability. Those who can not pay will not be assessed, but the Trustees and the Superintendent of the Bacon Health Center have agreed that the same service, the same care, and the same attention will be given to all who come to it, regardless of income or background.

The administration of the Health Center was assigned to the State Board of Trustees of the Delaware State Hospital. This Center has cost the Federal Government over a period of years over six million dollars for buildings, sewers, water-mains, roads, pavements, curbs, heating installations, lighting systems, grading and landscaping. This comes to Delaware as an outright gift.

In 1947 the General Assembly appropriated $875,000 for the remodeling and operation of the Health Center in its formative period. The Center is the only institution of its kind in the United States. Its objective is complete or partial rehabilitation of all children and adults of our community who are in need of such care. The work is to be performed on a statewide basis. The Center will also be an educational and training center. It will closely affiliate with New York University and the University of Pennsylvania, as well as the Alfred I. duPont Institute, Delaware State Hospital, and all the general hospitals and health agencies of the state.

On October 28, 1948 the Health Center was dedicated in the presence of a large audience including many notables from this and many other states. On November 23, 1948 the first patient was admitted, on November 30, 1948 the first alcoholic patients were admitted, and on December 8, 1948 the first children were admitted.

### Gross Private Hospital

This hospital, located at 817 West Street, Wilmington, was incorporated under the laws of Delaware in July, 1934, by three brothers, all physicians, and shortly thereafter it was opened for the admission of patients. It is a private general hospital with a capacity of fifteen beds, and is fully equipped with operating rooms, x-ray, maternity, and laboratory. It is an active institutional member in the American Hospital Association.

Its incorporators, original staff, and present officers are:

| | |
|---|---|
| President | Abram J. Gross |
| Vice-President | Elmer R. Gross |
| Secretary-Treasurer | Benjamin A. Gross |

### Osteopathic Hospital

A general hospital was opened at 1105 Madison Street, Wilmington, in 1945, with accommodations for 9 patients. In the summer of 1949 the Sellers estate near Edgemoor was acquired and after alterations will be operated as a general hospital of 50 beds.

### Miscellaneous Hospitals

Sunnybrook Cottage, established in 1919 as a preventorium for Delaware children who had been living in contact with pulmonary tuberculosis; was closed at the end of 1949. The State Board of Health and the Delaware Anti-Tuberculosis Society, who have been operating it jointly, find that it has outlived its purpose.

The Station Hospital, Fort duPont, located in Delaware City, was closed by the Army late in 1945, with the abandonment of the Fort as a military installation. It had a bed capacity of 46 at the time of its closing, with an average of 8 patients.

The Station Hospital, Fort Miles, located at Lewes, was closed by the Army on May 31, 1946. At the time of its closing it had a capacity of 125 beds, with 20 patients.

There are several nursing homes in the state, and the corrective and industrial schools and prisons, and the colleges have infirmaries with part-time medical service.

In 1947 a movement was begun to build a hospital in Seaford, the proposal being headed by former State Senator Harold W. T. Purnell. This new institution will be called the Nanticoke General Hospital, and construction on the first unit of 30 beds will begin in the spring of 1950. This unit, with its auxiliary services, will cost $429,500.

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The hospitals of Delaware have been particularly fortunate in that, whenever a demonstrable need has arisen for a new one or for the enlargement or improvement of an existing one, the people of Delaware have never failed to respond adequately. This is as it should be, for in 1916, the mid-point of World War 1, Wilmington became the wealthiest city in the world per capita, which dubious honor it still possesses. As a result, the buildings and equipment here compare very favorably with any metropolitan center, and are in fact superior to those found in most communities of comparable size. It is true that today the hospitals are constantly overcrowded, with long waiting lists, a deplorable situation due to the economic rise of the masses (''big war money''), the amazing increase in voluntary hospital and medical insurance (''Blue Cross,'' ''Blue Shield,''* etc.), the fact that the war has made everybody definitely more ''hospital conscious,'' and the phenomenal advances in medical armamentaria and techniques.

For example, Wilmington today has a total of 950 hospital beds, whereas, under the standard formula of the American Hospital Association, which declares that there should be five beds for every 1000 of the population, the city and environs, with an estimated population of 150,000, should be adequately cared for with 750 beds. The truth is that, with 200 beds above the national formula, the city is still in need of at least 200 more beds. That the community will provide these beds, as rapidly as the flux of the present times will permit is not to be doubted.

While Delaware** is one of the 16 states that has no four year medical school, its hospitals are centers of post-graduate education. Since the Delaware law requires at least a one-year internship for licensure, her hospitals are providing for many a native son that essential training.

An important service, rendered predominantly by the hospital, is that of ''Physical Medicine.'' This field, recently so named by the American Medical Association instead of ''Physical Therapy,'' is well covered in this state, all of the larger hospitals and most of the smaller ones maintaining a department, with modern equipment and well-trained attendants. These services are valuable adjuncts to the other therapeutic measures employed by the physician and surgeon. In addition to the hospitals, separate installations, such as the recently (1945) organized ''Curative Work Shop,'' operate in this field. This latter ''Shop'' also includes occupational therapy, especially valuable in the treatment of cases coming under the Workmen's Compensation Act, and the Vocational Rehabilitation program.

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*Group Hospital Service, Incorporated, state-wide "Blue Cross" Plan for the payment of hospital bills, was organized in 1935, under the joint sponsorship of the Medical Society of Delaware and the New Castle County Medical Society. In 1943 the "Blue Shield" Plan for the payment of doctors bills (surgery and maternity) was inaugurated. At present the Blue Cross enrollment is 170,000, the second highest in the nation (Rhode Island is first) or 57 per cent of the state's population, and Blue Shield enrollment is 160,000, or 50 per cent of the population, the highest percentage in the nation. In 1949 Blue Cross paid on hospital bills approximately the sum of $1,500,000, and Blue Shield paid on doctor bills the sum of $1,000,000. Blue Shield is now considering extending its coverage to include care of medical cases.

**The 1949 list is: Arizona, Delaware, Florida, Maine, Montana, Mississippi, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Rhode Island, South Dakota, Washington, West Virginia, Wyoming.

### NURSING

From the training of the first nurse on record—Deborah[15], who was the nurse of Rebecca, wife of Isaac, and who died about 1730 B.C.—to the training required of a nurse today is a far cry. Then the standard required was merely one of subservience to a superior intellect or to a superior social status. Today, after a lapse of more than 3500 years, the modern nurse has evolved to the point where, next to the physician, she has become the chief dispenser of health services. Whether, under the socialistic and cognate pressures of the present disjointed times, she can maintain her position as a health adjuvant remains to be seen. To our mind, the present-day threatened socialization of medicine, of nursing, and of hospitals would inevitably mean the end of the nurse as an effective free agent for public or private health; she would become a mere political robot, an end seriously to be regretted.

When, in comparison with the ancient and honorable lineage of medicine, which stems back at least 2350 years to the days of Hippocrates[16], (B. C. 460-370) one considers the birth of really modern nursing as being as recent as Florence Nightingale[17], (1823-1910) "the lady with the lamp" at Scutari in the Crimean War of 1854*, and then weighs the accomplishments since that date of that profession against those of the medici, one is compelled to marvel at the rapid advancement of that profession. While the physician provides the rationale of treatment and invents the techniques thereof, it is the nurse more often than the intern, and the intern more often than the attending physician, whose alarm in emergencies, certainly in hospitalized cases, leads to a life-saving act. Next to the cleric and the medicus, the nurse is the third oldest professional on earth.

The first Act governing the practice of nursing in Delaware was enacted in 1909, and was amended in 1911, 1921, 1931, and 1943. As finally amended, the "Board of Examiners for Registered Nurses" is composed of five registered nurses, instead of two physicians and three nurses as previously. The Board holds examinations twice a year, in June and December, and the passing mark is 70 in each subject. The present members of the Board are: President—Mrs. Grace L. Little, Wilmington. Secretary — Miss Margaret M. Butler, Wilmington; Miss Alice Stevenson, Milford; Miss Olive L. Healy, Wilmington; Miss Mary M. Klaes, Dover. Executive-Secretary—Miss Mary A. Moran,* Wilmington. To register in Delaware a nurse must be 21 years of age, of good moral character, and must have completed at least four years of high school education as a prerequisite. She must be a graduate of an accredited school of nursing where at least two years of training, both in theory and practice, is given in medical, surgical, pediatric and obstetrical nursing and their subdivisions, after which she must pass the examination. Reciprocity is granted to registered nurses of other states where the standards are as high as in Delaware.

All registered nurses must re-register every two years, in the even year. For 1946, 1525 nurses re-registered. There are about 650 nurses in the Delaware State Nurses Association. The current officers of this Association are:

President—Mrs. Grace L. Little, Wilmington.

Vice-President—Mrs. Anna M. Castle, Wilmington.

Secretary—Miss Elsie Chetkowska, Wilmington.

Treasurer—Miss Margaret Rosen, Wilmington.

Executive-Secretary—Mrs. Eleanor Jester, Wilmington.

There are seven schools of nursing* in Delaware, which are inspected annually, according to law. The oldest school is that of the Memorial Hospital, Wilmington, organized in 1888. Forty-two registered nurses are employed, and 127 students are in the school. This hospital has a fine nurses' residence, with the best of class room facilities. The students from this school, as well as from all of the schools of nursing in Delaware, receive three months training in psychiatry at the Delaware State Hospital, to comply with the regulations of the Curriculum Guide. They also get 4-6 weeks training in contagious diseases at the Doris Memorial unit of the Wilmington General Hospital, which affiliations are a part of the three year course required of all Delaware schools of nursing.

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*Florence Nightingale established the first training school for nurses at St. Thomas' Hospital, London, June 15, 1860.

*Our thanks to Miss Mary A. Moran for the data (1947) in the sections relating to the Delaware law and the training schools. Miss Moran died January 17, 1950.

The Delaware Hospital opened the second school in the state, organized in 1897. Fifty-eight registered nurses are employed, with 254 students, which includes the second year students from the Delaware State Hospital, and those from the Beebe Hospital, who affiliate there for a year for general nursing subjects.

The Wilmington General Hospital organized the third school, in 1910 as the School of the Physician's and Surgeons Hospital. It includes the Doris Memorial Unit for Contagious Diseases, the only one in Delaware and which is one of the best in the country, and the best administered regardless of locale. Forty registered nurses are employed, with 62 students in the school. In addition, 135 students from the other schools of nursing in the state receive 4-6 weeks training in contagious nursing during the year. Arrangements have been made to build a large addition to the nurses' home within the ensuing year.

The Beebe Hospital opened the fourth school in 1922. Twenty registered nurses are employed, and there are 28 students, who affiliate with the Delaware Hospital for five months in medicine, with the Doris Memorial Hospital for one month in contagious diseases, and with the Delaware State Hospital for three months in psychiatry. A new nurses' residence, with adequate class room facilities, is needed for this school.

The St. Francis Hospital school, the fifth, was organized in 1924. There are 14 registered nurses and 49 students. This school has a very fine nurses' residence, with excellent class room facilities and recreational opportunities.

The Milford Memorial Hospital, originally the Milford Emergency Hospital opened the sixth school in 1926. It employs 16 registered nurses, and there are 29 students, who affiliate at the Gallinger Hospital, Washington, D. C. for six months in medicine, and at the Delaware State Hospital for three months in psychiatry. They need a new nurses home at present.

The Delaware State Hospital School of Nursing was organized in 1929 as the seventh school. At least one-third of the patients have medical conditions in addition to their mental diseases. Eighteen registered nurses are employed, and there are 16 students in the school of nursing, who go to the Delaware Hospital for second year affiliation in medicine, and to the Doris Memorial for six weeks training in contagious diseases. In addition, 92 nurses from other hospitals in the state are affiliated for three months training in psychiatry, as required by the Curriculum Guide. This hospital is now in need of an addition to the nurses' home.

All of the nurses training schools operated in Delaware comply with the requirements* of the Curriculum Guide[18], which is the *sine qua non* of accreditation.

The economic position of the nurse in Delaware today is the highest in history. There is an acute shortage of nursing personnel for both hospital supervision and private duty nursing, due to the large expansion of industrial, institutional and public health nursing services. Consequently, those who are now available are earning at peak capacity and, if their health held out, could be employed 365 days at $9.00 per eight hour day in private duty work, or at $3285 per annum. This period of prosperity may not last much longer, because the times are increasingly disjointed, and there is currently an intense drive to recruit student nurses. Hence, unless some unforeseen factors arise there is the prospect that within the next few years production will again have caught up with demand; if this country faces a depression there may actually be a surplus, in which case the economic position of the nurse could revert to something like that of a decade ago, when she worked an average of 120 days and earned a gross of $600 per year[19]. At today's rates, this same degree of employment would yield an income of $1080 per annum, a level palpably too low for today's needs. It now costs the patient $27.00 a day if he needs a special nurse, plus hospital and doctors' bills, whereas his income averages only $9.00-$10.00 a day, so unless the future produces a better solution of the economics of the nurse-patient relationship than is evident today the nursing scheme may undergo radical changes. To buffer their position the nurses *may* be tempted to descend from their professional status and accept the status of trade-unionists (which many of the teachers in our public schools have already done), though be it said to their credit the members of the Delaware State Nurses Association in 1948 officially repudiated the idea and reaffirmed their intention to remain strictly professionals. We congratulate these nurses on their present high resolve not to bastardize their profession, and on their fine determination to bear in mind that the difference between a profession and a trade is that the one is fundamentally concerned with service, while the other is primarily interested in profit. Theirs *is* a profession—a personal service profession, like medicine—and, being true professionals, may they always keep it out of the sharp practices of the market place!

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*For many years critics have charged that this curriculum is not in tune with the times and is producing "half-baked doctorettes" who are over-trained for bedside nursing and undertrained for administrative nursing.

Approximately 250 Delaware nurses served in the military service during World War II. One of these, Second Lieutenant Rachel Hannah Sheridan, made the supreme sacrifice, being killed while serving in Africa.

The daughter of Mr. and Mrs. Thomas Sheridan, Sr., of McAdoo, Pennsylvania, near Wilkes-Barre, Lt. Sheridan was born on September 30, 1918. She enrolled at the Delaware State Hospital School of Nursing in 1938 and was graduated in 1941. Following graduation she immediately enlisted in the Army Nurse Corps and was called to duty in February, 1942. She received her basic training at Camp Upton, New York, and after serving at various other camps was sent overseas in January, 1943.

Lt. Sheridan was killed on November 24, 1943, while on active duty with the 32nd Station Hospital, somewhere in Algeria. The details of the action that resulted in her death were not made public by the War Department.

### Specialism and Research

In common with the rest of the country, with the discovery about 1885 of bacteria and fungi as the cause of many diseases, and the advent of the so-called era of "modern medicine," physicians in Delaware began to take special interest in special fields. The first of these to attain prominence was Dr. Read J. McKay, of Wilmington, who, by 1890, became well-known throughout the state as a specialist in diseases of the eye, ear, nose and throat, and in another decade acquired a national reputation. Incidentally, the first specialty to evolve nationally was ophthalmology. Other men soon became interested in other special fields, and over the years this trend increased gradually. Within the last fifteen years specialism here has grown by leaps and bounds. The state now has a body of able specialists, either full or part time, in the following specialties: anesthesia, allergy, bronchoscopy, cardiology, dermatology, diabetes, diseases of the lungs, endoctrinology, gastro-enterology, gynecology, industrial medicine, internal medicine, laryngology, metabolism, neurology, neuro-surgery, obstetrics, ophthalmology, orthopedics, otology, pathology, pediatrics, proctology, psychiatry, public health, radiology, roentgenology, surgery, syphilology, venerology, and urology.

The only important specialties not found here today are plastic and cosmetic surgery, and the new medical field of geriatrics, the conditions peculiar to the aged. Many of the specialists are Fellows of the American College of Physicians or of the American College of Surgeons, etc., or are Diplomates of the 15 various American Boards which certify specialists. Some are both Fellows and Diplomates. Along with this increase in specialism has come an increase in group practice.

Research of the clinical variety is conducted constantly in most of the hospitals, and the medical literature emanating from this source is a credit to Delaware, both as to quantity and quality. Original research, clinical and laboratory, is carried on at the Alfred I. duPont Institute, Wilmington, at the Franklin Institute Biochemical Research Foundation, at Newark, and at the hospitals in Wilmington. Research in industrial medicine is maintained by the medical departments of the larger corporations, such as the duPont Company, Hercules Powder Company, etc. Research in epidemiology and other phases of public health is conducted by the Boards of Health of the State and of the City of Wilmington. The publications of these various researches are increasing in number and importance.

Various medical and allied researches are conducted throughout the country on grants made by the Lalor Foundation of Wilmington, Playtex Park Research Institute of Dover, and others.

While Delaware, with no medical school, has not yet acquired a reputation as a medical research center, bits of original clinical and laboratory work done here and published have, to an appreciable degree, made their imprint on the science and literature of medicine. Further, medical research in this state is brighter now than at any other time in its history.

### Medical Economics

The present-day economic situation of the civilian physicians in the Delaware area (Middle East) is the lowest in the United States, the 1947 figures, which include $1675 of non-professional income, being as follows:

| | Gross | Net |
|---|---|---|
| Middle East | $15,117 | $ 9,347 |
| New England | 15,257 | 9,445 |
| Central | 19,241 | 11,709 |
| Southeast | 20,344 | 12,315 |
| Northwest | 21,782 | 13,346 |
| Southwest | 22,393 | 13,880 |
| Far West | 24,200 | 14,227 |
| All States | 18,500 | 11,300 |

Under the impetus of World War II and the post-war inflation the economic status of the physician rose 85 per cent from 1939 to 1943, while the national income rose 109 per cent. From 1943 to 1947 the physician's income rose 14 per cent, while the income of all gainfully employed persons rose 32 per cent. The surveys[20] show the professional gross income of active private physicians to have been as follows:

| | |
|---|---|
| 1928 | $ 9,329 |
| 1933 | 6,500 |
| 1935 | 6,139 |
| 1939 | 7,365 |
| 1943 | 13,606 |
| 1947 | 17,476 |

Both the 1943 and 1947 figures place the physician in the top 3 per cent of income brackets. The income of salaried physicians was 70 per cent of that of the independent practitioners. The income according to type of practice was:

| | 1943 | | 1947 | |
|---|---|---|---|---|
| | GROSS | NET | GROSS | NET |
| General practitioners | $10,747 | $ 6,519 | $15,953 | $ 9,541 |
| Partial specialists | 12,633 | 7,921 | 19,284 | 11,545 |
| Full specialists | 15,837 | 10,367 | 22,753 | 14,442 |
| All physicians | 13,606 | 8,688 | 17,476 | 9,884 |

It is not expected that this comparatively high 1947 level will be maintained; one rather looks for a return approximately to the level of 1943.

The 1943 surveys show also that the physicians had their offices, in their homes, 43 per cent; in office buildings, 39 per cent; in other buildings, 18 per cent. Employing a secretary, 56 per cent; a nurse, 31 per cent; a technician, 23 per cent. The average doctor saw 25 patients a day, and spent 11 hours daily in practice. He also spent 11 days on vacation, 4 days at medical conventions, 8 days in post-graduate study, and 19 days in medical reading.

We feel it fair to say that no group in this state has given more to their community, in cash or in kind, than the physicians. The average doctor here donates his services, to indigent or near-indigent patients, to the extent of $1500-$2000 per annum. Before the war-boom days it was $1000 greater.

Unfortunately, today the private practice of medicine in Delaware, along with the rest of the country, is at the cross-roads. Certain political pressure groups, some "liberal," some "pink," some frankly "red," are clamoring for some brand of "socialized medicine," a euphonious name for "political medicine." Born in Germany (Bismarck, 1875), tried in many a foreign country and found wanting according to American medical standards, the proponents of this compulsory sickness insurance legislation would revamp the practice of medicine overnight. However, science does not grow that way; the history of medicine, of chemistry, of engineering, etc., proves that science is an evolutionary process. What these political propagandists want is a revolutionary process.

In this current battle, which is not primarily a medical or scientific struggle but an economic and political one, the people of this country must decide which way they want to go—"right," or "left;" for conservatism, or for socialism. The battle is on; unfortunately the first battle-ground is medicine*, for Lenin said a generation ago that "Medicine is the keystone of the Socialist State." Should the American people lose this first fight for free enterprise the inevitable end will be the demise of democracy as we have known it in this country and the birth of a brand of bureaucratic totalitarianism the like of which we have never known and never wanted, a copy of the stuff that in recent years has bankrupted England, and all of it crazed with the criss-cross of the Kremlin.

### Cultism

Delaware, still with its archaic and ignoble but sometimes deterring whipping post, and with an excellent definition of the practice of medicine in its law, has been singularly free of medical cults and cultism. By way of contrast, in California one-half of the practitioners of the healing arts today are cultists. From time to time such nondescripts as naturopaths, naprapaths, heliopaths, oscillometrists, neurocalometrists, mechanotherapists, spectrochrome therapists, viavi healers, etc., along with an occasional cancer quack and an itinerant spectacle vendor have appeared in our midst, but their stay has been short because, not being able to qualify for a medical license, they have been told to move on—or else! The court action needed to accomplish this end has been quite negligible.

Towards the end of the 19th century there, appeared in this country two cultist schools destined to acquire a certain following; osteopathy (1892) and chiropractic (1895), both mainly based originally on the untenable theory that all disease is due primarily to impingement of nerves as they emerge from the spinal column. How they thus proposed to explain such diseases as cataract or brain tumor is still a mystery. Both began as drugless healers, but both are now going through a process of evolution, especially the former.

Osteopathy about twenty years ago began to shift its philosophy towards the right, to elevate the standards of its schools, and in more recent times to teach some drug therapeutics. As a result of these maneuvers, induced mainly by the opposition of the medical profession and the competition of the chiropractors, osteopathy has been converting itself more and more into something akin to regular medicine. For this reason the present attitude of the medical profession, if it cannot be called friendly, is distinctly more tolerant than it was formerly. If this trend continues it is reasonable to predict that, in time, osteopathy will be merged into or absorbed by regular medicine.

In Delaware, on March 25, 1907, the osteopaths were legalized by an amendment to the Medical Practice Act, which has been referred to in the section on Licensure. In recent years most of their applicants have passed the Board, and it is only fair to state that some of them have shown real ability: what a pity that such men did not enter regular medical schools!

They have a small hospital, opened in Wilmington in November, 1945, and are now acquiring a property in the northern suburbs for a larger and more efficient plant. Their society, the Delaware State Osteopathic Association, was organized in 1921 and incorporated in 1941, and now has 20 members.

For chiropractic not so much can be said. While it, too, is evolving, the rate of evolution has been much slower, and the quarrel between the "straights" and the "mixers" more protracted, with the result that comparatively little improvement in their philosophy or their schools is apparent. The effect of this is that both regular and osteopath disdain the "chiro." Their larger and least objectionable schools now include some medical diagnosis in their curricula, a beginning step towards regularity, and their purpose now seems to be to turn out "drugless physicians," but the gulf between medicine and chiropractic is so vast that only a milennium could bridge it. What they could not attain by merit they have, on occasion, obtained by money. They spent over $100,000 in obtaining the 1922 amendment to the California constitution legalizing their practice[21], yet a decade later Reed[22] still found that "chiropractors have no proper place in medical care." They adopted a code of ethics in 1936.

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*In 1949, for the first time in its 102 year history, the American Medical Association assessed its 140,000 members ($25) to combat socialized medicine. Delaware ranks seventh in the Union, 90 per cent of its members having paid this voluntary assessment.

In 1931 a Bill was introduced into the Delaware legislature to legalize chiropractic here, which passed both Houses after, according to report, $2000 had been paid by the chiropractors to a certain lobbyist, a prominent local politician now deceased, to assure its passage. Thanks to an intelligent and fearless Governor, C. Douglass Buck, this Bill was vetoed with a scathing message that was quoted from coast to coast.

In 1937 a somewhat similar Bill was introduced and passed both Houses. We do not know how much money, if any, this Bill cost the "chiros." We do know that the late Governor, Richard C. McMullen, a well-meaning but misguided official, signed the Bill and it became the law on May 18, 1937. In reply to our interrogation as to why he did so, he weakly stated that the chiropractors were here anyhow and might just as well be legalized, and that (*sic!*) the public should be "safeguarded from inefficient and improperly trained practitioners[23]."

The most unfortunate result of such legislation is that this type of practitioner legally acquires the status of "doctor," and to the less discerning of our citizenry, whose number is considerable, a doctor is a doctor, and they are not able to distinguish between the good and the bad, or between the scientifically trained and the quackishly indoctrinated.

This "safe-guarding" Act set up a Board of Chiropractic Examiners of three, who examine in anatomy, physiology, chemistry, pathology, bacteriology and hygiene, and chiropractic, the passing grade being 75 in each subject. The members of this Board apparently are to be commended for a strict enforcement of their law, as evidenced by the very few licenses they have granted.

The chiropractors have a society, the Delaware Chiropractic Association, organized in 1920 and incorporated in 1937, which meets quarterly in Wilmington, and has 35 members.

### Resume

The following items, which we believe to be authentic, are presented for the first time:

1. Dr. Jancke, and not Dr. Stidden, was the first doctor in Delaware.
2. There was a state society organized in Delaware in 1776, thus antedating the Act of Incorporation by twelve and a half years.
3. The history of the county societies has been searched further into the past, and the New Castle County Medical Society shown to have been an active organization in 1849, or earlier.
4. The history of medical journalism has been developed from its beginning in 1798.
5. The medical statistics of the two World Wars have been assembled.
6. A new note on the Tilton Hospital has been recorded.

### Conclusion

Thus ends the story of medicine in Delaware, with its ups and downs, but never-the-less a story of great names and great achievements. The profession here today typifies the best in American medicine. It looks forward to tomorrow with confidence in its background and standards, and in its industry, intelligence, and integrity. So long as the Delaware doctor possesses these qualities, and acquires the serenity which Osler[24] (1849-1919) eulogized in his "Aequinimitas" (1901) he can and will look the world in the eye, the peer of any man.

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# MEDICAL SOCIETY OF DELAWARE ROSTER OF MEMBERS (307) as of JANUARY 20, 1950

Unless otherwise noted, the city is Wilmington and/or vicinity. The addresses and telephone numbers given are for the office. * in the the column for "Specialty" indicates full time. * in column marked "Joined Society" means wife or daughter is a member of the Woman's Auxiliary.

We are quite certain this tabulation contains errors—15% of our members failed to return the very brief questionnaire. Prompt corrections *in writing* will be appreciated.

| | |
|---|---|
| A | Allergy |
| Adm | Medical Administration |
| ALR | Otology, Laryngology, and Rhinology |
| An | Anesthesia |
| C | Cardiology |
| D | Dermatology |
| G | Gynecology |
| GE | Gastro-enterology |
| Hon | Honorary Member |
| I | Internal Medicine |
| In | Industrial Medicine |
| N | Neurology |
| NS | Neuro-Surgery |
| O | Opthalmology |
| Ob | Obstetrics |
| Or | Orthopedics |
| P | Psychiatry |
| Pa | Pathology |
| Pd | Pediatrics |
| PH | Public Health |
| Pr | Proctology |
| R | Radiology |
| Ret | Retired |
| S | Surgery |
| T | Tuberculosis |
| U | Urology |
| VA | Veterans' Administration |

## 242 — NEW CASTLE COUNTY

| Name | Address | Specialty | Tel. | School | Licen. | Joined |
|---|---|---|---|---|---|---|
| Aikman, Everett M. | Medical Arts Bldg. | Pr | 4-7661 | Indiana, 1918 | 1943 | *1943 |
| Alava, Petronio | 1400 W. 8th Street | S* | 8-1021 | Wash. U., 1923 | 1925 | 1939 |
| Alden, John W., Jr. | Delaware Hosp. | R* | 4-5211 | Jeff., 1942 | 1943 | *1948 |
| Allen, Barth M. | 909 Washington St. | R* | 8-4025 | Med-Chi., 1915 | 1919 | *1920 |
| Allen, Olin S. | St. Petersburg, Fla. | C* | | Med-Chi., 1916 | 1917 | 1918 |
| Allen, Richard E. | Memorial Hosp. | An* | 5-6321 | Hahn., 1931 | 1947 | *1947 |
| Anderson, Lang W. | 914 Delaware Ave. | U* | 8-4564 | Md., 1918 | 1927 | *1928 |
| Anderson, Leon V. | 826 Poplar St. | | 8-4995 | Howard, 1929 | 1931 | 1948 |
| Armstrong, Fred. F. | 9 West 30th St. | In | 2-8187 | Md., 1917 | 1917 | *1918 |
| Baker, Thomas H. | Elsmere, Del. | | 5-8645 | Jeff., 1930 | 1931 | *1932 |
| Ballard, John W. | New Castle, Del. | | 93-2334 | So. Cal., 1914 | 1932 | 1933 |
| Bancroft, Charles M. | 613 Delaware Ave. | A* | 2-2562 | Jeff., 1938 | 1939 | *1940 |
| Banton, Conwell | 924 French St. | T* | 2-1932 | Penn., 1900 | 1901 | 1946 |
| Barnhart, John W. | 1005 Jefferson St. | I* | 5-5503 | Penn., 1941 | 1946 | *1947 |
| Barsky, Joseph M., Jr. | 710 West St. | | 4-7756 | Jeff., 1947 | 1948 | *1949 |
| Bartoshesky, Stephan W. | 830 Spruce Street | | 5-7282 | Jeff., 1944 | 1945 | *1948 |
| Beatty, Gerald A. | 503 Delaware Ave. | I* | 8-4356 | Jeff., 1930 | 1931 | *1932 |
| Beck, Joseph R. | 904 Delaware Ave. | U* | 8-4347 | Penn., 1933 | 1935 | *1935 |
| Berlin, Irving I. | 700 N. Jackston St. | | 8-1809 | Jeff., 1935 | 1937 | 1938 |
| Bird, W. Edwin | North American Bldg. | S* | 2-6512 | Hopkins, 1911 | 1913 | *1915 |
| Bohan, Edwin M. | 1521 Delaware Ave. | Ob* | 4-3310 | Queens, 1931 | 1934 | *1935 |
| Boines, George J. | 413 N. Broom St. | I | 2-6559 | Jeff., 1929 | 1931 | *1932 |
| Bowdle, Frederick A. | Medical Arts Bldg. | | 2-0289 | Hahn., 1934 | 1935 | 1936 |
| Briggs, Ward W. | 503 Delaware Ave. | 1* | 8-4356 | Hopkins, 1936 | 1938 | *1939 |
| Buckmaster, H G., (Hon) | 400 East 4th St. | Ret | 2-4311 | Penn., 1894 | 1894 | *1895 |
| Bulger, Thomas J. | 1501B N. Broom St. | S* | 4-2877 | Co'mbia, 1936 | 1938 | 1946 |
| Burch, Dana D. | 1105 Delaware Ave. | | 2-7541 | Temple, 1934 | 1936 | *1937 |
| Burns, Ira | 912 Jefferson St. | R* | 2-5085 | Md., 1905 | 1912 | *1915 |
| Butler, James W. | 2103 Washington St. | | 2-8928 | Penn., 1920 | 1921 | *1922 |
| Cannon, Norman L. | 1208 Delaware Ave. | U* | 4-7007 | Penn., 1937 | 1939 | *1941 |
| Carl, Harry A. | Christiana, Del. | | 93-3459 | Hahn., 1937 | 1938 | *1939 |
| Casella, Joseph V. | Wilm. Gen. Hosp. | Pa* | 6-2551 | G. Wash., 1940 | 1948 | *1948 |
| Casscells, S. Ward | 1102 N. Jackson St. | Or* | 6-2092 | Va., 1939 | 1949 | 1949 |
| Charamello, Italo | 1017 Adams St. | | 5-3123 | Va., 1940 | 1941 | *1942 |
| Chavin, Sidney | 812 Washington St. | | 2-2912 | Temple, 1925 | 1926 | 1927 |
| Chipman, I. Lewis | Medical Arts Bldg. | D* | 2-6614 | Med-Chi., 1905 | 1905 | 1907 |
| Chrzanowski, John A. | 213 N. Broom St. | | 4-0647 | Hahn., 1941 | 1942 | 1949 |
| Clagett, A. Henry, Jr. | 712 Washington St. | C* | 5-3718 | Hahn., 1936 | 1937 | 1938 |
| Compton, Arthur G. | 2204 Delaware Ave. | Ret. | 8-1071 | G. Wash., 1907 | 1945 | 1945 |
| Conrad, Marjorie E. | 406 Phila. Pike | | 91-4408 | Hahn., 1946 | 1947 | 1948 |
| Cooper, Raymond G. | Nemours Bldg. | In* | 4-5121 | St. Louis,1934 | 1949 | 1949 |
| Corrin, Kenneth M. | 1307 N. Rodney St. | N* | 4-2226 | Jeff., 1926 | 1938 | *1939 |
| Crutchley, Allan R. | Middletown, Del. | | 4412 | Georget'n, 1930 | 1933 | *1935 |
| Cutler, Norman L. | 1300 Harrison St. | O* | 9888 | Hopkins, 1932 | 1939 | *1940 |
| D'Alonzo, C. Anthony | 2325 Pennsylvania Ave. | In | 5-3827 | Va., 1937 | 1938 | *1939 |

| Name | Address | Specialty | Tel. | School | Licen. | Joined |
|---|---|---|---|---|---|---|
| Davidson, Douglas T. | Claymont, Del. | | 91-2031 | Penn., 1913 | 1920 | 1922 |
| Davis, Carl Henry | Rodney Ct. Apts. | ObG* | 9927 | Rush, 1907 | 1936 | *1936 |
| Davolos, Joseph J. | 1301 Penna. Ave. | ALR | 2-1193 | Georget-n, 1935 | 1937 | *1938 |
| DiCecco, Frank J. | 1340 Lancaster Ave. | | 8-4542 | Jeff., 1943 | 1944 | 1947 |
| Doering, John A. | Ft. Meade, S. Dak. | NP* | | Hahn., 1931 | 1946 | 1946 |
| Donoho, Christopher R. | Newark, Del. | | 8311 | Temple, 1942 | 1943 | 1946 |
| Dougherty, Charles J. | 510 W. 10th St. | S* | 4-8550 | Jeff., 1938 | 1940 | *1941 |
| Dougherty, G. L., (Hon.) | 1805½ Shallcross Ave. | | 2-7338 | Md., 1908 | 1909 | 1909 |
| Downes, John R., (Hon.) | Newark, Del. | PH* | 2-1334 | Md., 1904 | 1924 | 1924 |
| Duenner, Robt. H. | Newark, Del. | In* | 511 | G. Wash., 1910 | 1947 | 1947 |
| Durham, Davis G. | Medical Arts Bldg. | O* | 2-0753 | Jeff., 1943 | 1943 | *1948 |
| Durham, J. Richard, Jr. | 623 Delaware Ave. | C* | 2-1215 | Jeff., 1936 | 1937 | *1938 |
| Ebin, Judah | 1019 Park Place | NS* | 6-3450 | Co'mbia, 1933 | 1949 | 1949 |
| Elbert, Samuel G. | 928 French St. | | 7239 | McGill, 1929 | 1931 | 1948 |
| Ellegood, Robt. E. | Medical Arts Bldg. | OALR* | 2-4414 | Jeff., 1906 | 1908 | 1909 |
| Ellis, Walter W. (Hon.) | Delaware City, Del. | | 4538 | Jeff., 1905 | 1905 | *1905 |
| Fantazier, Elmer F. | 1100 N. Broom St. | Pd* | 7556 | Georget'n, 1944 | 1947 | *1949 |
| Farr, Lee E. | Alfred I. duPont Inst. | Pd* | 5-6386 | Yale, 1933 | | 1941 |
| Feltz, Thomas F. | 1908 Washington St. | | 4-8229 | Hahn, 1929 | 1930 | 1931 |
| Fenimore, Wm. N. | 1701 Greenhill Ave. | | 5-3041 | Jeff., 1921 | 1922 | 1923 |
| Fleming, Allen J. | Nemours Bldg. | In* | 4-5121 | McGill, 1932 | 1948 | *1941 |
| Flinn, Irvine M., Jr. | 501 Delaware Ave. | Or* | 6-1624 | Hopkins, 1925 | 1928 | 1929 |
| Flinn, Lewis B. | 503 Delaware Ave. | I* | 8-4356 | Hopkins, 1922 | 1922 | 1923 |
| Forman, Mildred B. | 2812 Market St. | | 7453 | M. C. Va., 1934 | 1935 | 1936 |
| Forrest, Geo. W. K. (Hon.) | 901 Jackson St. | P | 9412 | Penn., 1897 | 1897 | 1900 |
| Foulger, John H. | Haskell Lab. Ind. Tox | In* | 6151 | Cinci'ni, 1930 | 1950 | 1940 |
| Freyhan, Fritz A. | Del. State Hosp. | P* | 8-4366 | Berlin, 1937 | | 1945 |
| Garrison, Geo. H. H. | 1007 Park Place | ObG* | 6-8421 | Va., 1937 | 1946 | *1947 |
| Gasper, Major Wilson | Veterans Hosp. | VA*(Adm) | 93-581 | Mich., 1927 | | 1947 |
| Gaumer, Herman E. | 1100 Madison St. | | 2-6144 | Hahn., 1936 | 1937 | *1938 |
| Gay, Douglas M. | St. Francis Hosp. | Pa* | 7331 | Harvard, 1924 | 1934 | *1934 |
| Gehret, Andrew M. | 1007 Park Place | ObG* | 6-8421 | Jeff., 1929 | 1932 | *1933 |
| Gehrmann, Geo. H. | Nemours Bldg. | In* | 4-5121 | Long. Is., 1913 | 1926 | *1926 |
| Gelb, Jack | Elsmere, Del. | | 3-2880 | Jeff., 1946 | 1948 | *1949 |
| Genthner, William M. | 1100 King St. | In* | 6-8111 | Long Is., 1921 | 1942 | 1942 |
| Gerlach, Lawrence A. | Nemours Bldg. | In* | 4-5121 | Albany, 1929 | 1947 | 1947 |
| Gilday, Frank J. | 1724 N. Union St. | A | 5-4264 | Jeff., 1944 | 1945 | *1949 |
| Giles, Junius A. | 1103 Del. Ave. | ObG* | 9821 | Penn., 1931 | 1933 | *1934 |
| Gluckman, Albert G. | 1101 Madison St. | | 2-4847 | Md.,1932 | 1933 | 1935 |
| Goleburn, Maurice | 2312 Market St. | | 8-4684 | Temple, 1943 | 1944 | *1947 |
| Gordon, Gerald | Nemours Bldg. | P* | 4-5121 | Louisville, 1938 | 1945 | *1945 |
| Gordon, Gerhart J. | Del. State Hosp. | P* | 8-4366 | Berlin, 1930 | 1949 | 1942 |
| Gordy, Philip D. | 1102 Madison St. | NS* | 6-1056 | Mich., 1943 | 1949 | *1949 |
| Graff, John J. | St. Francis Hosp. | An* | 7331 | Jeff., 1942 | 1948 | 1948 |
| Gray, H. Wendell | 1101 Pa. Ave. | I* | 5-6601 | Hahn., 1925 | 1926 | 1927 |
| Gross, Abram J. | 817 West St. | S* | 2-6711 | Jeff., 1917 | 1917 | *1918 |
| Gross, Benjamin A. | 817 West St. | | 2-6711 | Mich., 1929 | 1930 | *1931 |
| Gruver, Arthur B. | 1809 Washington St. | | 2-5057 | Med-Chi., 1898 | 1933 | *1934 |
| Handy, Margaret I. | 1100 N. Broom St. | Pd* | 7556 | Hopkins, 1916 | 1918 | 1919 |
| Harwitz, Morris | 314 N. Broom St. | | 9692 | Jeff., 1926 | 1928 | *1929 |
| Hassler, Frank S. | 1201 Delaware Ave. | ObG* | 2-8851 | Md., 1943 | 1946 | *1947 |
| Hayes, Lloyd S. | 301 S. Jackson St. | | 8-1368 | M. C. Va., 1933 | 1936 | 1937 |
| Hazzard, William R. | Medical Arts Bldg. | OALR* | 6-8867 | Hahn., 1936 | 1937 | 1938 |
| Heather, Arthur J. | 909 Washington St. | | 4-9511 | Temple, 1940 | 1941 | *1942 |
| Heck, A. Leon | 822 Washington St. | S* | 5-3926 | Penn., 1919 | 1922 | *1922 |
| Heller, Roberts | 1625 W. 4th St. | An* | 5-6672 | Hahn., 1932 | 1933 | 1939 |
| Holzman, Mark B. | 1700 Washington St. | | 2-4812 | Med-Chi., 1904 | 1912 | *1913 |
| Homan, Frederic F. | 2501 Washington St. | | 2-7744 | Hahn., 1935 | 1936 | 1937 |
| Hooker, John W. | Memorial Hosp. | Pa* | 5-6321 | N. W. U., 1938 | 1946 | *1946 |
| Howard, John W. | Delaware Hosp. | Pa* | 4-5121 | Penn., 1936 | 1945 | *1945 |
| Hudiburg, C. L. | 1007 Park Place | ObG* | 4-5814 | Wash., 1928 | 1930 | *1931 |
| Hynes, John F. | 1100 N. Jackson St. | R*(Ca) | 4-1865 | Yale, 1930 | 1935 | *1936 |
| Hynes, Thomas V. | 1111 Brandywine Boul. | | 91-4112 | Yale, 1934 | 1937 | 1941 |
| Ingram, Albert L., Jr. | Medical Arts Bldg. | P* | 5-8238 | Md., 1942 | 1943 | *1949 |
| Johnson, Catherine P. | Medical Arts Bldg. | ObG* | 2-8515 | Penn., 1929 | 1933 | 1934 |
| Johnson, Edgar N. | Medical Arts Bldg. | OALR* | 2-7244 | Jeff., 1942 | 1943 | 1949 |
| Johnson, Wallace M. | Newark Del. | | 563 | Mich., 1922 | 1923 | 1929 |
| Jones, Frank A. | 1400 N. Franklin St. | S* | 4-5083 | Jeff., 1937 | 1941 | 1948 |
| Jones, Lawrence J. | 1010 Delaware Ave. | S* | 5-6714 | Penn., 1916 | 1916 | *1917 |
| Kansak, Harry A. | 828 Washington St. | | 2-2573 | Hahn., 1936 | 1937 | 1944 |
| Katzenstein, Lawrence | 829 Washington St. | D* | 5-5071 | Md., 1932 | 1947 | 1948 |
| Kerrigan, James W. | Claymont, Del. | | 91-4520 | Georget'n, 1932 | 1933 | 1934 |
| Kimble, Leroy R. | Bellefonte, Del. | | 91-6250 | Hahn., 1942 | 1943 | 1948 |
| Kimmick, John M. | Gen. Motors Corp. | In* | 3-8831 | Ind., 1938 | 1946 | 1946 |
| King, Allen D. | Medical Arts Bldg. | D* | 5-2935 | Penn., 1928 | 1932 | *1933 |
| King, David J. | Medical Arts Bldg. | Or* | 4-6422 | Toronto, 1939 | 1944 | *1945 |

| Name | Address | Specialty | Tel. | School | Licen. | Joined |
|---|---|---|---|---|---|---|
| King, John F. W. | 1006 Jefferson St. | ObG* | 4-4371 | Jeff., 1940 | 1947 | *1949 |
| Kraemer, Wm. H., (Hon.) | duPont Bldg. | GE | 2-3311 | Jeff., 1906 | 1908 | *1909 |
| Krieger, Edward M. | 1005 Jefferson St. | IC* | 5-5503 | Ohio., 1936 | 1937 | *1938 |
| Kullbom, Kenneth B. | 1701 Penna. Ave. | In | 5-3930 | Hahn., 1942 | 1944 | 1947 |
| Kurland, Abram B. | Newport, Del. |  | 3-7408 | Hahn., 1932 | 1933 | *1934 |
| Laird, Edmund G. | 501 Delaware Ave. | S* | 2-2597 | Hopkins, 1931 | 1938 | *1939 |
| LaMotte, W. Oscar | Medical Arts Bldg. | O* | 2-6621 | Penn., 1907 | 1914 | *1914 |
| LaMotte, William O., Jr. | Medical Arts Bldg. | O* | 2-6621 | Penn., 1940 | 1942 | 1944 |
| LaRue, Raymond T. | 910 Jefferson St. | U* | 4-5811 | Temple, 1920 | 1921 | 1930 |
| Lattomus, Winfield W. | Delaware Hospital | R* | 4-5211 | Penn., 1925 | 1934 | *1935 |
| Lawrence, Charles T. | 1303 Pennsylvania Ave. |  | 8-1864 | Jeff., 1934 | 1936 | *1937 |
| Lee, Walter H. | Middletown, Del. |  | 2131 | Penn., 1936 | 1937 | *1938 |
| Lenderman, E. Harvey | 1300 Delaware Ave. | S* | 2-0943 | Penn., 1908 | 1912 | *1913 |
| Lessey, A. Gerald | 1213 Gilpin Ave. | OALR* | 6-3252 | Jeff., 1940 | 1941 | *1942 |
| Levy, Charles | 710 West St. | I* | 4-7756 | Jeff., 1928 | 1930 | *1931 |
| Lewis, Dorsey W., (Hon.) | Middletown, Del. |  | 2722 | Md., 1896 | 1899 | 1899 |
| Lotz, A. King | Medical Arts Bldg. |  | 2-3125 | Hahn., 1917 | 1917 | 1925 |
| Lowe, C. Milton | Elmhurst, Del. |  | 3-7362 | Md., 1925 | 1932 | *1933 |
| Lumley, Walter S. | Elsmere, Del. |  | 3-8548 | Temple, 1913 | 1918 | *1919 |
| Lynch, Raymond A. | 619 Delaware Ave. | S* | 2-7013 | Temple, 1920 | 1924 | *1925 |
| Lyons, James A. | Claymont, Del. |  | 91-5643 | Hahn., 1943 | 1947 | *1948 |
| MacKelcan, Douglas L. | 1501 B. N. Broom St. |  | 4-2877 | Jeff.. 1945 | 1948 | 1949 |
| Maguire, Vincent deP. | 1208 Delaware Ave. |  | 5-9138 | Penn., 1943 | 1944 | 1947 |
| Maroney, Charles E. | Medical Arts Bldg. | U* | 2-1822 | Hahn., 1928 | 1929 | *1930 |
| Maroney, John W. | 501 Delaware Ave. | Pd* | 2-8910 | Yale, 1930 | 1938 | 1939 |
| Maske, Leslie I. | 2822 Washington St. |  | 4-5980 | Hahn., 1934 | 1936 | 1938 |
| Mayerberg, Emil R. | Medical Arts Bldg. | OALR* | 2-2211 | Jeff., 1916 | 1917 | *1918 |
| McGee, Lemuel C. | Del. Trust Bldg. | In* | 7211 | Rush, 1929 | 1942 | *1940 |
| McGuire, H. Thomas | New Castle, Del. |  | 93-3452 | Georet'n, 1932 | 1933 | *1934 |
| McLane, Wm. L. | Richardson Pk, Del. |  | 2-4018 | Jeff., 1944 | 1945 | *1947 |
| Mencher, Arthur A. | Newark, Del. |  | 2-6941 | McGill, 1929 | 1931 | 1932 |
| Messick, Joseph M. | Nemours Bldg. | In* | 4-5121 | Penn., 1928 | 1933 | *1934 |
| Miller, Edgar R. | 1210 Delaware Ave. | I* | 5-3329 | Md., 1925 | 1927 | 1928 |
| Miller, Elizabeth B. | 1210 Delaware Ave. | I* | 5-3329 | Wom (Pa.), '27 | 1928 | 1929 |
| Miller, Herman S. | 609 Washington St. | U* | 8-4942 | Md., 1911 | 1911 | 1912 |
| Miller, S. Thomas | Wilm. Gen. Hosp. | R* | 6-2551 | Penn., 1929 | 1947 | 1950 |
| Mino, Robert A. | 1100 N. Jackson St. | S* | 4-1865 | Yale, 1942 | 1946 | 1948 |
| Moore, Raymond B. | 1106 Woodlawn Ave. | S | 5-6831 | Penn., 1923 | 1924 | *1949 |
| Munson, C. Leith | 1005 Jefferson St. | S* | 5-5503 | Jeff., 1930 | 1931 | *1935 |
| Murray, Henry D. | New Castle, Del. |  | 93-2811 | Jeff.. 1937 | 1939 | *1947 |
| Murray, Roger W. | 613 W. 10th St: | S | 2-8093 | Jeff., 1925 | 1928 | *1929 |
| Nah, Victor C. | 301 N. Van Buren St. | U | 9933 | Md., 1913 | 1914 | *1915 |
| Neuendorf, Frank M. | duPont Wilm. Shops | In* | 4-5121 | Albany, 1911 | 1946 | 1946 |
| Niles, Jerome D. | Middletown, Del. | Ob* | 3351 | Med-Chi., 1909 | 1910 | 1911 |
| Nutter, E. Hughes | Newark, Del. |  | 3121 | Hahn., 1935 | 1936 | 1937 |
| O'Donnell, Edward T. | 1004 Jefferson St. | Pd* | 4-0767 | Yale., 1934 | 1937 | *1939 |
| Olivere, Peter J. | 613 Delaware Ave. | R* | 5-2703 | Georget'n, 1937 | 1938 | *1940 |
| Parvis, Edward S. | 1103 Penna Ave. |  | 9957 | Hahn., 1929 | 1930 | *1931 |
| Pawley, Sigmund B. | 820 Maryland Ave. |  | 2-5633 | Jeff., 1917 | 1917 | *1918 |
| Pearson, G. Burton, (Hon.) | 24 Brandywine Blvd. | Ret | 91-2121 | Albany, 1897 | 1901 | 1909 |
| Pennington, Alfred W. | Nemours Bldg. | In* | 4-5121 | M. C. Va., 1929 | 1949 | 1949 |
| Pennington, Martin B. | 1003 Park Place |  | 2-1422 | Hahn., 1935 | 1936 | *1940 |
| Phillips, Lawrence D. | Brandywine Sanat. | T* | 3-8893 | Md., 1919 | 1927 | *1928 |
| Pierson, Frank F. | 1007 Jefferson St. |  | 8-4033 | Hahn., 1891 | 1891 | 1923 |
| Pierson, John C. | 1400 N. Franklin St. | S* | 4-5083 | Hahn., 1923 | 1924 | *1925 |
| Pierson, W. Morris | Medical Arts Bldg. | OALR* | 2-2724 | Hahn., 1921 | 1921 | 1925 |
| Platt, David | 4th and Franklin Sts. |  | 4-8024 | Penn., 1940 | 1941 | 1942 |
| Platt, Ethel F. | 4th and Franklin Sts. |  | 4-8024 | Wom(Pa.), '41 | 1942 | 1943 |
| Poole, Gerald O. | 600 Delaware Ave. | OALR* | 5-7174 | Hahn., 1931 | 1932 | *1933 |
| Postles, Wilbur E. | 2233 Market St. |  | 6-8031 | Hahn., 1904 | 1904 | 1923 |
| Preston, Daniel J. | 600 Delaware Ave. | S* | 2-5642 | Temple, 1934 | 1940 | *1941 |
| Preston, Willard F. | 2222 W. 17th St. | ObG* | 4-1349 | Georget'n. 1925 | 1926 | *1927 |
| Rafal, Harold S. | 1100 N. Jackson St. | S* | 5-7187 | M. C. Va., 1943 | 1947 | *1948 |
| Reardon, William T. | 207 West 29th St. | OALR* | 2-0179 | Md., 1934 | 1936 | *1937 |
| Reed, Howard L. | Del. Trust Bldg. | In* | 7211 | Duke, 1936 | 1947 | *1947 |
| Rennie, Sylvester W. | 1201 Delaware Ave. | G* | 2-8851 | Penn., 1930 | 1934 | *1935 |
| Resnick, Elton S. | 2118 Washington St. |  | 4-3140 | Md., 1937 | 1939 | 1940 |
| Rich, David | Wilm. Manor, Del. |  | 93-2674 | Wayne, 1939 | 1941 | 1948 |
| Richards, Charles F. | 1005 Jefferson St. | S* | 5-5503 | Jeff., 1942 | 1943 | *1949 |
| Robbins, John E. | 203 W. 18th St. |  | 4-5000 | Hahn., 1930 | 1931 | 1932 |
| Rovitti, Francis P. | 501 Concord Ave. |  | 4-2079 | Georget'n, 1938 | 1939 | *1940 |
| Rovitti, Peter A. M. | 600 Washington St. |  | 4-3851 | Balto. U., 1902 | 1902 | 1902 |
| Russell, Karl S. | Wilm. Gen. Hosp. | An* | 6-2551 | Hahn., 1937 | 1949 | 1949 |
| Russo, Joseph R. | 1902 West 4th St. |  | 4-0220 | Jeff., 1924 | 1925 | 1927 |
| Ryon, William G. | 301 W. 39th St. |  | 2-7529 | Temple, 1939 | 1940 | *1941 |
| Samuel, Meredith I., (Hon.) | Dravo Bldg. | VA* | 8-5246 | Md., 1900 | 1900 | 1903 |

| Name | Address | Specialty | Tel. | School | Licen. | Joined |
|---|---|---|---|---|---|---|
| Sanders, R. Douglas | Delaware Hospital | An* | 4-5211 | Louisville, 1928 | 1947 | 1947 |
| Schell, James F. | Veterans Hosp. | VA*(S) | 91--581 | Penn., 1927 | | 1948 |
| Seeger, Allen H. | 920 Jefferson St. | ObG* | 2-7579 | Buffalo, 1942 | 1948 | 1948 |
| Selinkoff, J. Jesse | Elsmere, Del. | | 3-3763 | G. Wash., 1933 | 1935 | *1936 |
| Serino, Giraldo S. | 1403 W. 9th St. | S* | 2-4390 | Jeff., 1932 | 1941 | *1941 |
| Shands, Alfred R., Jr. | Alfred I. duPont Inst. | Or* | 5-6386 | Va., 1922 | 1937 | 1937 |
| Shapiro, J. A. | North American Bldg. | OALR* | 6-8623 | Jeff., 1926 | 1927 | 1928 |
| Shaw, Paul A. | 909 Washington St. | R* | 8-4025 | Hahn., 1928 | 1929 | *1930 |
| Silverman, William C. | Newark, Del. | | 4461 | Buffalo, 1937 | 1944 | *1944 |
| Skura, Frank S. | 311 N. Broom St. | | 9772 | Georget'n 1935 | 1936 | 1937 |
| Slovin, Isadore | 1104 N. Jackson St. | ObG* | 5-3500 | Jeff., 1939 | 1940 | *1942 |
| Smith, Alexander | 1904 Washington St. | | 4-6633 | Penn., 1926 | 1928 | *1929 |
| Smith, Paul R. | 2201 Washington St. | Ob | 2-1615 | Jeff., 1907 | 1908 | *1909 |
| Sortman, Harold P. | 2718 Washington St. | | 6-8956 | Jeff., 1936 | 1937 | *1938 |
| Spackman, James G. | Memorial Hosp. | S* | 5-6321 | Hahn., 1912 | 1912 | *1923 |
| Spencer, F. Erle | 1101 Delaware Ave. | ObG* | 6-8024 | Hahn., 1915 | 1915 | 1942 |
| Springer, Harold L. | 1013 Washington St. | S* | 5-6032 | Penn., 1902 | 1904 | 1904 |
| Squires, Millard F. | Richardson Pk., Del. | | 3-7726 | Md., 1936 | 1937 | *1938 |
| Stat, Sidney | 1818 Delaware Ave. | | 4-6006 | Penn., 1928 | 1929 | 1930 |
| Stayton, Howard N., Jr. | 2011 Baynard Blvd. | | 9550 | Md., 1940 | 1941 | *1942 |
| Stern, Oscar N. | 1103 Delaware Ave. | ObG* | 9821 | Penn., 1932 | 1933 | *1934 |
| Stevens-Young, Verna | 1009 Park Place | ObG* | 4-3162 | Manitoba, 1925 | 1928 | 1929 |
| Stradley, Shermer H. | 2008 Baynard Blvd. | I | 2-1532 | Hahn., 1934 | 1935 | *1936 |
| Strange, Theodore B. | 1102 N. Jackson St. | Or* | 6-2092 | Va., 1940 | 1949 | 1949 |
| Strikol, Albert J. | 621 Delaware Ave. | OALR* | 5-2323 | Temple, 1919 | 1919 | *1920 |
| Stroud, Henry H. | 1017 Park Place | Pd* | 5-2234 | Jeff., 1939 | 1940 | *1947 |
| Szatkowski, Eugene J. | 732 S. Broom St. | | 4-5507 | Georget'n, 1935 | 1936 | *1937 |
| Tarrant, Harold A. | 1315 W. 9th St. | | 5-8747 | P&S(Bost.), 1931 | 1932 | *1935 |
| Tarumianz, M. A. | Del. State Hosp. | NP* | 8-4366 | Berlin, 1910 | 1925 | *1925 |
| Taylor, Harry | 1833 Lancaster Ave. | | 2-5202 | Temple, 1937 | 1938 | *1939 |
| Thomas, Roger B. | Richardson Park, Del. | | 2-1322 | Jeff., 1940 | 1941 | *1942 |
| Tolochko, Myer H. | Dravo Bldg. | VA*(Adm) | 8-5246 | Pitts., 1928 | | 1946 |
| Tybout, R. Ray., (Hon.) | Fernhook, Del. | Ret | 8-0782 | Penn., 1887 | 1888 | 1888 |
| Urie, William J. | Elmhurst, Del. | | 3-7414 | Hahn., 1929 | 1930 | *1940 |
| Vallett, Brice S. | Medical Arts Bldg. | U* | 2-1188 | Va., 1918 | 1918 | 1919 |
| Vaughan, Ed. M., (Hon.) | Middletown, Del. | | 4534 | Jeff., 1905 | 1905 | 1905 |
| Vaughan, George W. | 617 Delaware Ave. | GE* | 6-8633 | Md., 1917 | 1917 | *1920 |
| Vincent, Bayard R. | 1105 Delaware Ave. | O* | 2-8816 | Temple. 1938 | 1939 | 1949 |
| Vitiello, Anthony F. | 617 West St. | | 2-4705 | Loyola, 1943 | 1944 | *1945 |
| Voss, Norwood W. | 2227 Market St. | | 2-1217 | Md., 1916 | 1918 | *1919 |
| Wagner, Charles E. | Medical Arts Bldg. | Pd* | 2-7621 | Hopkins, 1918 | 1922 | *1923 |
| Walker, George L. | 506 West 6th St. | | 2-5233 | Hahn., 1928 | 1929 | 1941 |
| Warren, Robert O. Y. | 1403 Delaware Ave. | Pd* | 8-5021 | Hopkins, 1929 | 1932 | 1933 |
| Washburn, Victor D. | 822 Washington St. | U | 5-3926 | Atlantic, 1905 | 1905 | 1924 |
| Waters, Charles M. | 215 N. Bancroft Pkwy. | | 8-1710 | Hahn., 1934 | 1935 | *1936 |

## 23 — KENT COUNTY

| | | | | | | |
|---|---|---|---|---|---|---|
| Baker, John B. | Milford | Pd* | 4821 | Penn. 1930 | 1933 | *1933 |
| Burton, Benjamin F. | Dover | Pd* | 3715 | Penn., 1930 | 1933 | 1935 |
| Caldwell, John R. | Dover | | 3225 | Temple, 1943 | 1947 | 1948 |
| Chipman, Wm. T. | Harrington | | 374 | Md., 1912 | 1913 | 1914 |
| Comegys, Richard W. | Clayton | | Smy. 4051 | Md., 1933 | 1934 | *1934 |
| Everett, Franklin R. | Dover | | 5577 | Md., 1925 | 1937 | *1937 |
| Fooks, Carleton C. | Milford | | 4123 | Jeff., 1927 | 1928 | *1929 |
| Layton, Robert R. | Dover | S* | 4301 | Jeff., 1932 | 1935 | *1946 |
| Lazzeri, John J. | Smyrna | | 8561 | Temple, 1944 | 1947 | *1947 |
| MacCollum, I. J. | Wyoming | | Bfd. 4631 | Jeff., 1914 | 1914 | *1914 |
| Marshall, Samuel M. D. | Milford | OALR* | 4897 | Penn., 1909 | 1909 | 1909 |
| Marshall, William, Jr. | Milford | | 4122 | Penn., 1905 | 1905 | *1905 |
| McDaniel, Joseph S. | Dover | | 5838 | Jeff., 1918 | 1918 | *1919 |
| McDaniel, J. Stites | Dover | | 5838 | Jeff., 1939 | 1940 | 1940 |
| Mercer, Eugene H. | Dover | | 2990 | Hahn., 1833 | 1935 | 1936 |
| Neese, Harry G. | Wyoming | | Bfd. 3151 | Temple, 1944 | 1946 | 1946 |
| Prickett, Clarence J. | Smyrna | Adm* | 5071 | Med-Chi. 1916 | 1916 | *1917 |
| Pritchard, William C., Jr. | Smyrna | | 6141 | Temple, 1938 | 1940 | *1940 |
| Scull, Carl B., Jr. | Dover | | 3225 | Penn., 1928 | 1929 | 1929 |
| Smith, Hewitt W. | Harrington | | 432 | G. Wash., 1932 | 1933 | *1934 |
| Spies, John W. | Salt Lake City, Utah | PH* | | Harvard, 1924 | 1947 | 1947 |
| Wilson, Henry V'P. | Dover | S* | 2623 | Hopkins, 1923 | 1927 | 1928 |
| Worden, Stanley | Dover | R | 2812 | Hopkins, 1926 | 1928 | 1929 |

# 42 — SUSSEX COUNTY

| Name | Address | Specialty | Tel. | School | Licen. | Joined |
|---|---|---|---|---|---|---|
| Allen, Ira A. B. | Seaford | | 681 | Md. MC., 1905 | 1923 | 1923 |
| Barnes, Bruce | Seaford | | 637 | Md., 1921 | 1926 | 1926 |
| Bechert, Rudolph H. | Bridgeville | | 4125 | Hahn., 1943 | 1949 | 1949 |
| Beebe, James | Lewes | S* | 2211 | Jeff., 1906 | 1906 | *1906 |
| Beebe, James, Jr. | Lewes | | 2211 | Jeff., 1944 | 1945 | *1948 |
| Beebe, Richard C. | Lewes | S* | 2211 | Jeff., 1913 | 1913 | *1914 |
| Bice, Donald L. | Seaford | In | 3520 | Hahn. 1939 | 1940 | 1940 |
| Daisey, W. Orville | Rehoboth | OALR | 6951 | Md. MC., 1911 | 1920 | 1946 |
| Dobson, Leslie M. | Milford | | 5014 | Jeff., 1937 | 1938 | *1940 |
| Elliott, J. Roscoe | Laurel | S | 545 | Hopkins, 1909 | 1912 | 1912 |
| Ellis, W. Pierce | Laurel | | 3773 | Jeff., 1945 | 1946 | *1948 |
| Fitchett, Lawrence L. | Milford | | 4318 | Wisc., 1931 | 1933 | *1933 |
| Fox, J. Leland | Seaford | | 3204 | Jeff., 1936 | 1938 | *1938 |
| Gray, Catherine C. | Bridgeville | | 3061 | Wom (Phil.) '25 | 1928 | 1928 |
| Hocker, Ulysses W. | Lewes | | 5861 | Long Is. 1891 | 1891 | *1892 |
| Homan, James B. | Milford | | 8522 | Hahn., 1937 | 1940 | *1945 |
| Hudson, Floyd I. | Rehoboth | PH* | 5951 | Jeff., 1932 | 1933 | *1933 |
| Hudson, Virgil A. | Millsboro | | 2511 | Hahn., 1932 | 1933 | 1933 |
| Hume, W. Garrett | Selbyville | | 3112 | Temple, 1941 | 1942 | *1946 |
| James, Oliver A. | Milford | S* | 4029 | Hopkins, 1933 | 1938 | 1938 |
| James, Oliver V. | Milford | S | 4727 | Md., 1906., | 1906 | *1906 |
| Klingel, Robert L. | Rehoboth | | 2191 | St. Louis, 1943 | 1947 | *1947 |
| Long, Robert S. | Frankford | | Rdy. 3391 | Jeff., 1940 | 1941 | *1941 |
| Lynch, John W. | Seaford | | 3345 | Long Is., 1935 | 1936 | *1936 |
| Lynch, S. Howard | Delmar | | 7971 | Md., 1906 | 1911 | 1911 |
| Manning, Harrison M. | Seaford | | 535 | Jeff., 1912 | 1912 | 1913 |
| Marine, David | Rehoboth | | 2041 | Hopkins, 1905 | 1945 | 1945 |
| Marshall, William V. | Rehoboth | | 8471 | Jeff., 1913 | 1913 | *1913 |
| Marvil, James E. | Laurel | OALR* | 3641 | Jeff., 1930 | 1931 | *1931 |
| Metzler, Gottfried, Jr. | Bridgeville | | 5461 | Jeff., 1928 | 1930 | *1930 |
| Moyer, Charles M. | Laurel | | 3610 | Temple, 1936 | 1938 | *1938 |
| Riggin, Howard S. | Seaford | | 3227 | N.Y.M.C., 1916 | 1939 | 1939 |
| Schwedenberg, Theodore | Seaford | | 3338 | Berlin, 1902 | 1945 | 1945 |
| Smoot, Aubrey C. | Georgetown | | 2020 | Md., 1928 | 1930 | *1930 |
| Stambaugh, Ervin L. | Lewes | S | 2211 | Jeff., 1927 | 1929 | *1929 |
| Thompson, Maurice B. | Cristobal, C. Z. | | | Co'umbia, 1931 | 1946 | 1946 |
| Tobin, Thomas J. | Milton | | 5582 | Jeff., 1944 | 1944 | *1947 |
| Tomlinson, William | Seaford | In* | 3559 | Med-Chi., 1902 | 1903 | *1948 |
| VanValkenburgh, Geo. M. | Georgetown | | 296 | Okla., 1931 | 1933 | *1933 |
| Waples, Joseph B., Jr. | Georgetown | | 52 | Va., 1910 | 1910 | *1910 |
| Williams, Arnold H. | Laurel | Pd | 539 | Jeff., 1930 | 1937 | 1938 |
| Wood, George V. | Millsboro | | 3011 | M.C. Va., 1915 | 1925 | *1925 |

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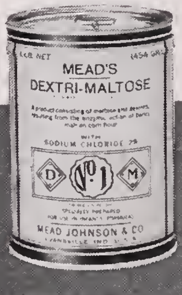

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# DELAWARE STATE MEDICAL JOURNAL

*Official Organ of the Medical Society of Delaware*

INCORPORATED 1789

VOLUME 22
NUMBER 2

FEBRUARY, 1950

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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## A SEGMENT OF THE PROBLEM OF ABNORMAL DRINKING

Charles J. Katz, M. D.,*
Delaware City, Del.

In response to increased tension and anxiety, agitation, retardation, and excitement are common daily reactions occurring in "normal" individuals who never become overtly ill as well as in those who do. Humans from time to time develop a spiral reaction in which worry begets worry, and the resulting increase in tension and anxiety revives doubts or conflicts over personal adequacy and integrity. The new anxieties thus stimulated and the new doubts thus raised add to the worried person's insecurity and further elevate the intrapsychic pressure. There are various modes of intra- and extra-personal dealing with this augmented tension and anxiety. This brief resume deals with the methods used by so-called normals and the "abnormal" who, in our culture, by means of convivial company or in solitary state, create or find a stimulating, exciting, or/ and permissive environment in the release afforded by alcoholic imbibition, with its subsequent depression or cortical function. The use of alcohol, as with other compensatory techniques, usually personally unwise or socially undesirable, must and can be understood only as the resultant, compulsively repetitive of an earlier phase of unresolved conflict and intolerable strain, reactivated in the present.

These mechanisms can be seen reproduced in the laboratory animal, using the method of Masserman.[1] Interest was aroused in the adventitious unplanned "experiments of daily life" as they were processed through the available facilities in Illinois during the period the writer was employed by the Department of Public Welfare in Illinois. The procedure of study attempted was to try to apply the Bowman-Jellinek Classification schedule[2] to an unselected group of chronic alcoholics. After more than two years of attempting to use this frame of reference in a general sort of way, it was realized that a more intensive type of study would have to be initiated. An Alcoholic Diagnostic Clinic was set up; the time encompassed was from March, 1948, through December, 1948. Cases were unselected, as they came before the staff for classification at the Kankakee State Hospital. The criterion utilized was that the subjects had been sent classified as chronic alcoholics to Psychopathic Hospital from one of the various jails in and about the metropolitan area of Chicago. Others in this group had been taken to Psychopathic Hospital on the recommendation of one of the legal authorities in Chicago or Cook County, or had been sent by one of the physicians in the Chicago metropolitan area. These individuals comprised 97% of the total group of chronic alcoholics received at the Kankakee State Hospital; (the other 3% had been received directly at Kankakee State Hospital). All were abnormal drinkers, and comprised a total of 119 females and 504 males; there were of course repeaters, but these were culled out and counted only once. Information was obtained from the patients, their relatives, the police, and the social service agencies involved; neuropsychiatric and psychologic data were obtained by hospital personnel. The diagnostic staff was briefed on the Bowman-Jellinek Scale and any tentative diagnosis was a consensus.

From the onset much difficulty was experienced in attempting to arrive at a satisfactory classificatory evaluation for the following reasons: (1) inadequate information, and because of this some cases had to be discarded; (2) disparity in the opinions of the members of the staff—this was unavoidable; (3) the fact that the substrate for the Bowman-Jellinck Scale was composed of a precipitate of recent philosophical imbrications on the medieval evaluation of man, and not from facts observed and tested. To avoid further such difficulty, each patient was evaluated individually, independently of any preconceived schedule, taking into account the various observable facets of his existence. The material thus derived was checked in part against the data available in the U. S. Census Bureau Reports for the year of 1947[3], or when that was not available, for 1940[4]. Other sources were used as were found fitting.

---

*Assistant Superintendent, Governor Bacon Health Center.

To relieve the busy practitioner of the burden of reading dry and dull statistics, liberty will be taken in presenting only the digest of information derived therefrom.

There was noted a preponderance of incidence of alcoholics for the age groups from 35 to 54 years; this skewing in the direction of the median age might be considered as a reflection of the pressures of living concomitant with increase in years in our present day culture. The factor of reduction in tissue tolerance with advance in years must be considered.

In comparison with their incidence in census population in the Chicago metropolitan area (U. S. Census report for 1947), there was noted a marked preponderance of the negro alcoholics who were sent to Kankakee State Hospital. There was sufficient disparity to point up the possible significant trends, seen elsewhere, of the demoralizing effect of urban existence on some components of our population. An inferior social status, a feeling of being underprivileged, insecurity, dissatisfaction, frustration and denigration, may cause more overt personality disturbance than would be demonstrated in a simpler rural environment.

The foreign-born white alcoholic was slightly less a problem proportionately, than was the native born alcoholic living in the Chicago metropolitan district. However, it was noted, that the alcoholic offspring of foreign-born white parentage were extremely disproportionate in relation to their expected ratio referent to a comparable census figure. Adjustment is not only a biologic concept, it is also a type of relationship between the individual and his society; there is a cultural lag or distortion inherent in belonging to a minority group. A well-adjusted person is a person who is well-adjusted to a given society or subculture. When a person or a family enters another cultural group, either partially or completely, the question arises as to how well he or they become accultured, since each society has created its own definite local cultural standards, and these decide whether a given behaviorial pattern is to be recognized as normal or abnormal. The cultural standards may be a factor in the etiology of abnormal drinking.

The patients received at the Kankakee State Hospital were increased out of proportion to their relation to the census incidence for the components of Irish, English, Scotch and French derivation. Little gross reason can be found which would indicate a specific localization factor for abnormal drinking in any citizen group of European stock.

An examination of the figures for educational attainments of the alcoholic group compared to those of the general population would point-up the fact that the nonalcoholic in general attains a higher educational level than the abnormal drinker.

When the economic-industrial characteristics of the alcoholic patients sent to Kankakee were examined the patients were found to be preponderantly unskilled and unemployed. This must be borne in mind when the question of therapy arises and a plan for extramural existence is considered. Were those people unskilled and unemployed because they are abnormal drinkers; or, are they abnormal drinkers because they are unskilled and unemployed?

The reproductive level of the male and female alcoholics hospitalized at the State Hospital was such as to throw a serious doubt on the claims for a genetic etiology of alcoholism.

Statistics referent to position in the sibling relationship and the significance of the total number of children in the family did not reveal any valid data from which conclusions could be drawn. This is a nuclear problem still referent to the interpersonal factors alive in each family constellation.

The figures for duration of the alcoholic state indicated that the largest cluster was found for the period of the 15-24 year group.

This is of little isolated significance, except that it fits well into the histories of long, protracted episodes of bio-social disturbance, and perhaps improper and inadequate handling of the alcoholic by the medical profession.

Examination of the records in regard to institutionalization and incarceration in durance vile indicates that arrest and subsequent treatment, as if the alcoholics were criminals, does little to assist in treatment. Little data could be extracted which would qualify and justify a strictly custodial "dry" period as being of any real value to either the patient or the society which treats him so harshly. Hidden in a mass of statistical data are found the wanderings from one state to another; one jail to another, and one state hospital or other eleemosynary institution after another. A very small number—less than 5%, had spent any time in a private facility; the state hospitals in Illinois which have borne the brunt of the treatment offered were never designed for the care of such people, but were, in the absence of any other more adequate facility, the best available. This must indicate a gross fumbling around in our treatment and handling of the "abnormal drinkers."

Voluntary admissions to the available facilities were 27% male and 14% female; (Kankakee M:1.6% and F:3.2%; Psychopathic Hospital M:25.4%; F:10.8%). 21.7% of the males and 36.7% of the female alcoholics were arrested by the police for being drunk and disorderly in public; 20.4% of the males and 17.5% of the females were found by the police in a psychotic state (D.T.'s, A.A.H., etc.). 18% of the males were arrested by the police on complaint of the parents, siblings or spouse; 19.2% of the females were arrested by the police on the complaint of parents, siblings, or spouse. 4.4% of the male and 4.2% of the female patients had been picked up by the police after they had threatened or attempted a suicidal assault. Significantly enough, only 1.2% of the males and 0.8% of the females had been picked up for assaulting or otherwise molesting children. Only 1% of the male and 0% female had attempted homicide. These facts should indicate that the alcoholics (at least the ones received at Kankakee) did not constitute any major threat to society, but were in the nature rather of public nuisances. As such, they should not be treated as criminals.

The marital status of the alcoholics admitted to Kankakee, when checked against the current population report of the Chicago metropolitan district, for April 1947, indicated that abnormal drinkers tend to marry less, and to separate and to divorce[5] oftener than the non-alcoholic. There is also evidence to the effect that the so-called single alcoholic female, and to a lesser extent the male, tend to unite in a common-law arrangement. As a group, the abnormal drinkers do not achieve a proper marital status, nor do they maintain adequately the marital state. It has been found in Cook County, (the largest part of the Chicago metropolitan district) for the period of September 1945 to April 1947, there were 398 divorces (5%) of a total of 8,000 in which the chief complaint was drunkenness. This seems a small percentage; however, when the other factors of desertion (57%) and cruelty (34%) were fragmented, inebriety made a heavy contribution to the whole.

Death of a parent, one or both; divorce or separation; conflict between parents initiated by alcoholism and brutality of the father; excessive strictness on the part of the father, were reported as most significant in causation of their own inebriety, by the alcoholics questioned. However, these made up so small a group, compared with those alcoholics reporting nothing significant, as best as they could recall, that care must be taken in attempting to point up any one factor or group of causes as being of specific importance in the etiology of abnormal drinking.

The factor of religion,[6] as exemplified in reduced church attendance and affiliation, was interesting in that the religious aspect of the problem drinker's life did not seem to be strongly entrenched, and may have constituted a probable source of weakness. This feature is acknowledged by A. A. in their group form of therapy. The lack of religion, so-called, may represent one more facet in the isolation characteristic of the abnormal drinker.

Complete physical examination of the entire group studied, indicated that there were no special predilections or predispositions to somatic disorders for alcoholics who were admitted to the State Hospital.

*Psychologic Work-up* (completed on 90% of the patients) a. Psychometric tests were based on the Wechsler Bellevue[7] or the Illinois Initial Tests.[8] In the group of I.Q. 79 or less, the "norm" group equalled 8.9%; the alcoholic males 6.8% and females 14.1%. In the 80-90 I.Q. group, the norm was 16%, while the alcoholic males equalled 9.8%; female alcoholics 22.4%. In the 91-110 I. Q. group, the norm was 50%; alcoholic males 43.4%, alcoholic females 42.2%. In the group I.Q. 111-119 the norm was 16.0%; the alcoholic males 13.4% and alcoholic females 12.1%. This does not indicate any special grouping of the alcoholics in a definite intellectual level much disparate from that of the so-called "norm" (at least the percentage difference was not too significant). The I.Q. cannot be used as a criterion for diagnosis or evaluation of the alcoholically deviated individual.

b. *Special Psychologic Tests.* The Rorschach was used in 18% of the total male group and 30% of the total female group in those alcoholic patients concerning whom the classification staff considered a more intensive psychologic work-up was necessary. Of these, 24.5% of the males and 8.4% of the female alcoholics presented findings significant of a severe neurotic tendency. In 33% of the male and 33.3% of the female alcoholics, there were findings indicative of a severe undifferentiated intra-personal disorganization not otherwise classifiable. In 0.5% male and 13.9% of the female there was noted evidence of organic deterioration.

The Bender-Gestalt, Goldstein-Scheerer Cube, and the Babcock Deterioration tests were used in the study of 18% of the total alcoholic males and 20% of the total alcoholic females concerning whom more data was desired for elucidation of their problems and potentialities. The results indicated that in this group, 14% of the male and 16.7% of the females demonstrated marked schizophrenic trends. In 14.% of the males and 8.3% of the females definite neurotic trends were noted. In 40% of the male and 54.2% of the female alcoholics there were noted findings significant of a severe undifferentiated intra-personal disorganization. In 35% of the male and 20.8% of the female patients definite evidence of pathologic organic deterioration was noted.

The above findings—admittedly in a selected group—indicate that the term *chronic alcoholic* may cover a multitude of personality disorders and deviations. This label is not specifically given, nor authorized in the approved A.P.A. nomenclature; but is in general use most elsewhere save for a few oases of enlightenment!

*Classification.* A simple classification schema, evolved de proprio motu, derived in part from the Bowman-Jellinck Schedule, from the accepted A.P.A. groupings, and from the material available from the various offshoots of the so-called "dynamic" schools of psychiatry, is followed. The resultant is a pragmatic frame of reference which is not to be taken too seriously and refers only to the patient group surveyed at Kankakee State Hospital.

CLASSIFICATION SCHEMA

| | M% | F% |
|---|---|---|
| a. Psychopathic Personality | 2.6 | 3.5 |
| b. Stupid (mental defective) | 3.2 | 8.4 |
| c. Symptomatic: | | |
| 1. Functional | | |
| (a) Psychotic | | |
| (1) Schizoid | 14.4 | 15.8 |
| (2) Cycloid (M & D) | 0.6 | 2.5 |
| (3) Paranoid | 5.6 | 10.0 |
| (b) Neurotic | | |
| (1) Primary: referable to conditional childhood personality disorders | 15.0 | 28.3 |
| (2) Reactive or Secondary: (socially conditional, "stammtisch") | 44.0 | 25.7 |
| 2. Organic: | | |
| (a) Epileptic | 4.4 | 2.5 |
| (b) Structural Change | | |
| (1) Undifferentiated | 1.6 | 2.5 |
| (2) Lues (CNS) | 1.6 | 0.8 |
| (3) Cerebral Arteriosclerosis | 5.4 | 0. |
| (4) Senile | 1.6 | 0. |

It is to be re-emphasized that these figures were derived from human beings previously classified innumerable times by the epithet chronic alcoholic. While the preceding is only another species of name-calling, yet it does indicate that each alcoholic patient must be carefully diagnosed and evaluated on his or her individual merits. If this is not done we can be accused of closing our eyes to the painfully obvious, and of neglecting our duty as medical men. It has been stated by

Haggard and Jellinek[9] that 30% of inebriates were found with no personality abnormality, 50% of the alcoholics presented signs and symptoms of major neuropsychiatric disorders, and that 20% presented signs and symptoms of minor neuropsychiatric deviations including the neuroses. This writer has never found a well-balanced or adequately integrated "abnormal drinker;" there is in the least disturbed of these individuals a dysphoria of variable degree and duration.

*Discussion.* Rejecting pseudo-philosophical cogitations and merycolic derivations of man, data accumulates pointing up the idea that a pragmatic evaluation on an objective factual basis utilizing all approaches and means of extracting information from every source relevant to the individual chronic alcoholic or abnormal drinker seems to be the only method whereby such a person can be helped. The choice lies between the authoritarian versus the laissez-faire versus the biosocial-developmental points of view.

In the evaluation of the so-called stupid drinker, must be carefully acknowledged the fact that unless the concept of a reversible deterioration is kept in mind, and retesting procedures utilized, the initial toxic-encephalopathic state may lead inexperienced workers to assume that a greater or lesser degree of mental deficiency exists when in reality such is not the case. Too, in cases of functional mental deficiency, diagnoses may be inaccurate unless the concept of such a pseudo-oligophrenic condition is kept in mind. Treatment and disposition are, in our present state of neurolinguistics, dependent on diagnosis.

The psychotic individual classified in the Schizoid group may have masqueraded as an alcoholic habituant for years before his capacity for integration becomes irrevocably dissolved by alcohol. The number is large, and this has been corroborated by the work of Ellerman.[10] The experienced State Hospital physician sees this transmutation often.

The cycloid psychotic alcoholic may evidence the stigmata of chronic alcoholism when, in reality as the result of being in the throes of an excessive emotional fluctuation, he satisfies a dimly felt need in the dulling of cortical sensibilities by imbibition of alcohol.

The paranoid psychotic whether male or female must be considered as one touched to the basic core of his being by the fancied threat of partial or total loss of the sexual partner—this is either endogenous or possibly exogenous in origin. The alcohol sought as a measure of relief merely touches off an explosive retaliatory reaction which may not be alleviated by any means, not even sobriety! Such dangerous individuals must be carefully assayed before they are considered for return to the home where they came. There may be, too, in some an organic component in the form of a diffuse hyperplastic sclerosis of the cortical vessels. This was seen in microscopic examination of the brains of two patients (aet. 36, 42) who expired during the course of an acute alcoholically induced paranoid state; there was noted widening of the perivascular spaces and small circular areas of necrobiosis.

The neurotic personality masquerading as a chronic alcoholic or abnormal drinker is only now coming to be more adequately and properly recognized. Manson[11] claims that alcoholics, psychosomatics, or psychoneurotics are essentially composed of similar personality characteristics; this is a basic similarity, but with different modes of problem solution. He found that the chronic alcoholics possess more psychoneurotic and psychosomatic symptoms than the non-alcoholics. Karlan[12] suggests a close relationship between alcoholism, psychoneurosis, and inadequate tension states. It was noted earlier that the overt features of the family constellation presented to the individual in the home are not important. As suggested by Portnoy[13], it is not the particular external family configuration which is significant, but the internal meaning this has for the individual concerned. He indicates that the so-called neurotic character of the alcoholic mainfests itself in inebriety, since the usual protective isomorphic devices of the orthodox neurotic are inadequate and the extra assistance derived from the cortical-dulling effect of alcohol is needed. The primary neurotic group may be considered to be comprised of those in whom a personality disturbance was engendered in early childhood; this defect has now been transmuted by time into the neurotic character whose symptomatology is that of the chronic alcoholic. The reactive or secondary neurotic may be considered to arise conditionally as a function of the disorganized life situation resulting from the alcohol addiction or abnormal drinking rather than to the presence of a specific underlying psychopathic structure.

The epileptic is a rather puzzling individual. Many questions could be raised; i.e., are those individuals subject to convulsive reactions during the course of, or following an alcoholic debauch to be considered as epileptic? Much controlled study needs to be done to solve this question. Greenblatt[14] on a comparison of tracings from 240 control subjects with those from 157 cases of alcoholism and 115 cases of idiopathic epilepsy indicates that the incidence of E.E.G. abnormality in patients with chronic alcoholism increases with age. Persons with chronic alcoholism without psychosis, irrespective of the duration of drinking, show essentially nothing of E.E.G. significance. Chronic alcoholism with psychosis is in general associated with an incidence of E.E.G. abnormality which is higher than normal. No evidence of paroxysmal dysrhythmia was found in 5 patients with pathologic intoxication, although 3 of the 5 subjects had abnormal E.E.G.'s. The highest incidence of E.E.G. abnormality was found among those with deterioration or Korsakoff's syndrome. Yet a relatively low incidence of E.E.G. abnormality (17%) was found in a series of 24 patients with "whiskey-fits" (with a negative family history and a negative past history for epilepsy and with seizures occurring only in association with alcoholism). On the other hand, a relatively high incidence of E.E.G. abnormality (75%) was found in a large series of patients with idiopathic epilepsy with onset of seizures in the same age range as the chronic alcoholics with the fits. There is then a need for an intensive work-up of the so-called epileptic alcoholic. A close connection has been found with regard to the E.E.G. and reversible pathology and the level of consciousness by Engel[15] in work done on subjects during acute alcoholic states.

To be noted all through the fact and fancy of this brief resume about the chronic alcoholic are the threads of: (1) *isolation*, either in the beginning or as the result of drinking—this is destructive and encompassing in its effect on the personality; (2) *destruction of family unity* in the sense of its implications for developmental mental hygiene; (3) *economic loss* due to forced lay-offs and absenteeism in industry, and to the cost of maintaining courts and hospitals.

*Conclusions.* A label, a tag, a name, or a number is not needed nor is it important; instead, an approach which is both implicitly and explicitly biosocially pragmatic is required. It has to be one which will attempt honestly to estimate personality factors operative, subject these to valid testing and to objective appraisal. In this loose yet inclusive frame of reference it will be demonstrated that the features of the developmental acculturation process are equivalent with the so-called constitutional and intra-personal experiential facets of living.

The remedy:

1. A.A. group therapy.
2. Intra-personal anl interpersonal psychotherapy by any available discipline available to any Neuropsychiatrist.
3. Medical:
   a) Conditioned-reflex therapy.
   b) Special chemicals—antabuse, adrenal cortical extract, vitamins, insulin, etc.
   c) General somatic care as needed.
4. So-called non-medical, non-psychiatric treatment.
   a) Psychologic counselling and remedial work.
   b) Ecclesiastical approach[16] including the "sawdust trail". This may help the alcoholic toward an increasing tolerance of himself and others and promote maturation of the personality. Anything which can strike to the so-called "soul" and produce an emotional storm and cognitive reintegration.
5. If all of the above are unavailing, then the chronic alcoholic must be kept in a restricted environment wherein he may be permitted as much personality expression as seems fitting and appropriate, but from which he may not be discharged for as long as seems necessary on an indeterminate basis. It will be seen then, that the approach to the understanding of, and the treatment for the abnormal drinker must proceed slowly, thoroughly, and not by saltatory excursions into uncontrolled, affectively oriented, ratiocinations.

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The Alcoholic Rehabilitation Division of the Governor Bacon Health Center is dedicated to the care of the alcoholic without psychosis. This individual is considered as a patient who is ill and in need of help from the medical profession rather than a social outcast or/ and criminal. The department formally opened on December 1, 1948. Since that time 129 first admissions, abnormal drinkers, have been processed through the available facilities.

Presently every alcoholic admitted is taken to the Acute Treatment Service where he is examined physically, given the benefit of a neurologic survey and subjected to clinical laboratory procedures to determine his psychobiologic assets and liabilities. Massive doses of vitamins, insulin, oxygen as needed, tolserol, etc., are given in order to repair damage and to restore the inebriate to an adequate physical state as rapidly as possible. When all has been done on a purely medical basis that can be done, the patient is transferred to another section, the Continued Treatment Service at Robin Building. Here he is observed, counselled, exposed to twice weekly meetings with A.A. visitors from the state groups, and placed on a regime of industrial therapy; regular, scientifically designed meals are offered; he is encouraged to sleep at least eight hours and to avail himself of the recreational facilities on the grounds. During his stay at Robin, the alcoholic patient is subject to an intensive neuropsychiatric and psychologic series of examinations which culminate in a diagnostic staff clinic with the medical director, staff psychiatrists, psychologists, and others, including responsible members of A.A. Here the patient is evaluated in regard to a diagnosis, prognosis, and further treatment.

The alcoholic patient is considered pragmatically in regard to long and short term care. A simple, realistic program of rehabilitation and reeducation is oriented around his needs. Other state agencies are called upon for assistance as the need may establish itself. Psychiatric counsel is available daily to all patients. They are encouraged to seek out the psychiatrist rather than to be forced or coerced into treatment. Those who seem unwilling or fearful are approached obliquely and painlessly.

Results to date in a general way are encouraging, though there have been failures and discouraging events take place; this is not an uncommon occurrence, as those who work with the alcoholics have found. It has been determined that the type of patient, the physical, psychological, social, economic, and familial dislocation of the Delawarean alcoholic are similar to that presented by male and female problem drinkers studied in Illinois and outlined earlier.

Plans for the future are directed toward a more adequate and encompassing program:

a. Intensive use of special therapies such as Analeptics, Antabuse, Endocrines when adequate personnel have been trained in the use of these and their place in the therapy for the alcoholic.

b. A diagnostic and outpatient treatment clinic where psychiatric help with follow-up and continuation care on an extra-mural basis can be given.

c. The Information Service Bureau, presently operating on a minimal basis, will be implemented. This will be a focal point for dissemination of practical information and guidance on matters pertaining to alcoholism, both individual and general on a medical basis. This information service is operated now in collaboration with the various local A.A. groups throughout Delaware.

d. A Training Depot for physicians, psychologists, sociologists, social workers, educators and industrialists is available for those who wish to study the problem drinker in the milieu offered at the Center. This can be done on the basis of the experience presently available, the knowledge already gained at the Center in regard to this socio-biologic problem, and the abundantly available clientele.

It has been found here, as elsewhere throughout the United States, that any program purporting to help, aid, assist, succor, or in any way alleviate the difficulties to which the alcoholic is heir, *must* take into consideration the men and women who make up A.A. The staff has found that without the help of the A.A. groups really significant work with the alcoholic is not possible. As a requirement for admission, it is requested that the prospective alcoholic patients have an A.A. sponsor, if such can be obtained. During his stay at the Center the patient is encouraged to contact a reliable member of A.A. for help; to this end there are frequent visits by A.A. on other days than the regularly scheduled bi-weekly meetings.

Finally, when the time comes for departure from the Center, the patient is discharged on an approved basis only when the psychiatrist, A.A. sponsor and patient are in relative agreement that the patient is ready for an attempt at extramural adjustment. The reason for this is obvious in that the Center attempts to prepare for his departure before the patient is admitted. Practical experience indicates that an alcoholic patient must not be thrust out into what may seem to him to be a relatively hostile society (nor permitted to vegetate in the Center) without empathetic assistance from others who have had a similar erlebnis. The A.A. groups and individuals function this way in a fashion analogous to social service organizations which provide for and assist in follow-up and continuation care. With the help of A.A., the relatives are encouraged and given an insight into the needs of the alcoholic patient as they relate to his intra-familial and extra-familial orientations. The staff of the Governor Bacon Health Center make a concentrated attempt to help the alcoholic, his family, and others involved become aware of the significance of alcoholic behavior and what may be done about this over/ under-defined problem.

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# MYASTHENIA GRAVIS

## A Review of Etiologic Possibilities

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This memorandum is an attempt to summarize and correlate the various lines of published information bearing on the problem of myasthenia gravis. This will be limited primarily to discussion of factors that may relate to etiology, since symptomatology and treatment have been extensively treated elsewhere.[1-6]

### Defect in Size and Number of Motor End Plates

Myasthenia gravis is probably a problem of motor end plates.[9] The extensive histopathologic studies of Carey[7] provide fundamental information which seems applicable. These studies suggest that motor end plates are not fixed anatomical entities but are constituted on an expendable base. Stimulation, shock, exhaustion, etc., result in gross changes in area of these units. We infer that under normal conditions of physical activity these units change rapidly in size—being expanded at the peak of physical activity and retracted under conditions of fatigue.

While Carey reports no studies directly on myasthenic subjects, his investigation[8] of the action of prostigmine, curare, acetylcholine, and quinine throw light on the problem. The following tabulation shows that prostigmine expands, while curare with quinine decreases the area of motor end plates.

Mean Dimensions of 1,000 Motor End Plates, Bicep Femoris Muscle of Chameleons, Under Various Conditions

| | Normal | Treated With Prostigmine | Treated With Curare Plus Quinine |
|---|---|---|---|
| Length microns | 87.6 | 110.5 | 49.5 |
| Width microns | 32.9 | 54.6 | 25.4 |

The result from prostigmine administered to the myasthenic is explained if we assume deficiency in size and number of end plates to the degree that some of the muscle fibers lack normal neural connection. The expansive action of prostigmine as shown in the above table would then readily account for the dramatic improvement, and the converse action of curare and quinine would similarly explain the opposite response to these drugs. We may suggest as a hypothesis that in the myasthenic subject the motor end plate area is decreased to a value near the threshold limit.

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This relatively simple postulate can explain also the phenomenon of "facilitation."[9] The second of two stimuli timed, say 20 milliseconds apart, would carry the nerve impulse more readily than the initial impulse due to expansion of the motor end plate resulting from the initial stimulus.

### Acetylcholine and The Motor End Plates

The cause for the deficiency in end plate area in the case of the myasthenic seems to be related to capacity for synthesizing acetylcholine. Torda and Wolff[10,11] have conducted biochemical in vitro studies which indicate deficiency for acetylcholine synthesis in presence of serum or spinal fluid from myasthenic subjects. These studies while so far unconfirmed by other workers, appear quite interesting. The following tabulation summarizes the results:

| | AVERAGES | |
|---|---|---|
| | Sixty-four Control Subjects | Nine Myasthenia Gravis Subjects |
| Acetylcholine synthesized in presence of serum 4 hours at 38° C. gamma/ 100 mg. frog brain | 1.45 | .84 |
| | Twenty-five Controls | Three M. G. |
| Same for spinal fluid .... | 2.11 | 1.29 |

Selected from the reports by Torda and Wolff, we find also the following data[12] showing effect of muscular fatigue on acetycholine synthesis both for normal and myasthenic subjects.

| | Normal Sera Average of 12 Subjects | | Myasthenia Gravis Sera - Average of Five Subjects | |
|---|---|---|---|---|
| | Resting | After Fatigue | Resting | After Fatigue |
| Acetylcholine synthesized in % of healthy control serum .................. | 110(std.) | 60 | 73 | 58 |

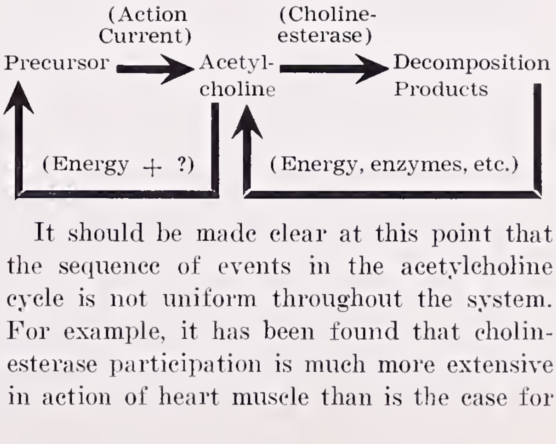
Fatigue in the normal subject, therefore, seems associated with decreased capacity to synthesize acetylcholine, and by this criterion the myasthenic is characteristically in a state approaching continuous fatigue.

Regarding relation of motor end plates to acetylcholine, Carey[8] states as follows: "The experimental variation in the quantity of the granules in the sole plate of Kuhne is the structural expression of the differential phases in the secretion of the chemical substances, possibly acetylcholine, from the terminal axons of the motor end plates." It is possible that the motor end plates may be constituted on an expendable acetylcholine foundation. Under conditions of physical exhaustion, the system has exhausted its acetylcholine and synthesis is also at subnormal rate. We may guess that the end plates then have small potential for expansion on stimulation and we have the familiar characteristics of fatigue. In the case of the myasthenic, a generalized acetylcholine deficiency would similarly lead to decrease of end plate area and we have a condition of fatigue or near fatigue even before physical activity.

### Acetylcholine Biochemistry

The hydrolysis of acetylcholine with the assistance of cholinesterase is well known, but it has been fairly recently determined that acetylcholine may be inactivated by another mechanism[13] which deserves separate discussion. It has been shown that in non-fatigued muscle, the acetylcholine is returned directly to a precursor form with the aid of energy-yielding organic phosphates. Hydrolysis takes place only under conditions of fatigue when dephosphorylation energy is in poor supply. Cholinesterase hydrolysis seems, therefore, a relatively slower process and an emergency provision in muscle for periods when insufficient energy is available.

We may indicate a portion of the acetylcholine cycle by the following designations:



It should be made clear at this point that the sequence of events in the acetylcholine cycle is not uniform throughout the system. For example, it has been found that cholinesterase participation is much more extensive in action of heart muscle than is the case for skeletal muscle[13]. Also, it has been shown that ACh precursor deficiency leads to impairment of oxidative metabolism of muscle[42]. It is evident, therefore, that the *modus operandi* of acetylcholine varies with the structure and further that its function is not limited to nerve impulse transmission. These complexites must be borne in mind when considering problems involving acetylcholine.

We should visualize the two-step reaction above in the nature of a dynamic equilibrium following mass action lines typical of any chemical reaction. All the various enzymes, metabolites, hormones, etc., are acting simultaneously and impartially (except, of course, at the moment of nerve impulse transmission). The overall reaction— that is, whether toward precursor or to inactive decomposition products, is normally determined by the availability of energy. Cholinesterase dominates under conditions of fatigue; restoration of precusor occurs during period of rest.

It should be recognized, of course, that body tissue represents a heterogeneous component in the system and participation in an equilibrium then presents a considerably different situation from that obtained in a homogeneous system. The known extreme lability of precursor suggests that there is a more or less continuous exchange of acetylcholine between tissue and surrounding fluids and the term "equilibrium" is applicable. This could explain the "curare-like" effect reported by Walker[15], Torda and Wolff, and others[16-18] for serum from working arm. Inhibition of acetylcholine synthesis in body fluids from whatever cause could, by this reasoning, result in a "curarelike" effect— that is, a decrease in transmission of the nerve impulse.

This indication has indeed been supported by experiments[17] in which a series of twelve compounds with known influence on the acetylcholine synthesizing reaction were applied to a special frog preparation for observation of effect on myoneural transmission. A striking parallelism was reported.

### EFFECT OF ANTI-CHOLINESTERASES

The literature reports on physostigmine, prostigmine, tetraethylpyrophosphate, and diisopropylfluorophosphate (DFP) in treatment of M.G. While these agents have varying degrees of effectiveness, it nevertheless appears that all have a pronounced capacity to improve muscle strength. Indeed, these known cholinesterase inhibitors appear to be in a class by themselves as compared with other type drugs; i.e., ephedrine, adrenaline, guanadine, KCL, etc. These observations very strongly support the general hypothesis that acetylcholine supply is inadequate at certain points in the myasthenic condition.

The situation is to some degree confused by the fact that DFP is much less useful than prostigmine in relief of symptoms of M.G., but is known to decrease plasma esterase levels much more completely[19]. However, we have substantial clarification from recent evidence that DFP acts selectively on the so-called "pseudocholinesterase" and inhibits "true" cholinesterase only at relatively high concentrations[43]. The measurements of esterase in blood in connection with the studies of DFP in M.G. did not differentiate between these two enzymes and it appears likely that the "true" esterase may have been affected less than was indicated by the in vitro measurements. In addition, the motor end plates have been reported to carry 15,000 times as much cholinesterase as surrounding tissue[44]. It is known that cholinesterase previously bound by eserine or prostigmine is completely protected against DFP[45]. The high concentration of esterase at the end plate suggests some form of specific affinity which may be sufficient to prevent reaction with DFP. This is all the more probable since it is known that DFP is entirely unlike acetylcholine, acetylcholine precursor, or prostigmine in that it is oil soluble.

Harvey, et al[46], have shown that a good level of strength can be realized with DFP in M.G. by the intra-arterial injection method which allows a high concentration with avoidance of the many distressing side effects. This is consistent with the reasoning above. In general, the evidence from administration of this radically different anti-esterase confirms rather than disproves the hypothesis that cholinergic anomaly is somehow involved in the M.G. problem.

### ACTION OF CURARE

The similarity of the symptoms in myasthenia gravis to the reactions resulting from curare quite easily lead to the conclusion that some toxin in the system of the myasthenic subject interferes with nerve-impulse transmission by the curare mechanism. However, curarized muscle shows decreased response to acetylcholine in contrast to myasthenic muscle which is hypersensitive to acetylcholine[9]. From available information, it appears that curare does not inhibit acetylcholine synthesis[20], except at concentrations considerably above those at which it is known to begin to have pharmacological activity. Abdon, et al[21], show that it blocks release in muscle of acetylcholine if stimulation is via nerve, but is completely without effect on this reaction if the muscle is electrically stimulated directly. Torda and Wolff[17] show that curare is extremely effective in decreasing response of isolated muscle to direct treatment with acetylcholine and in this respect is completely different from several other agents, which decrease myoneural transmission in parallel with decrease in acetylcholine synthesis. Carey suggests that the action may be one of coagulation of certain membranes, and his microphotographs of curarized end-plates lend support to this explanation. The motor end plate might be compared to a hand with fingers extended. Acetylcholine deficiency shortens the fingers, but curare closes the hand to form a fist.

These several lines of evidence suggest that a toxin of the curare type seems not to be involved. In general, it would appear that some portion of the enzyme system which assists in formation of acetylcholine may be faulty in function. Possibly a toxin poisons some essential enzyme and this toxin could be either a foreign material or merely an excess of naturally occurring metabolite. Alternatively, the defect could be in the equipment responsible for generating the enzyme. Indeed, it is possible that the same symptoms could result from more than one cause which may explain the frequent conflicting reports in M.G. investigations

## Review of Causes for Deficient Acetylcholine

The more relevant reports bearing on the problem will be outlined briefly. It may be stated generally that negative findings seem the rule with the exception of some extremely interesting results recently reported for adrenocorticotrophic hormone (ACTH).

Adams, Power, and Boothby[22] review the literature dealing with analytical studies and also report comprehensive data from their own work. Metabolites studied were calcium, magnesium, sodium, potassium, phosphorus, sugar, urea, creatinine, amino acids, and uric acid. Findings were negative. In a study of potassium levels in M. G., Cumings[36] reports serum K to be normal with increase by about 100% on administration of prostigmine.

Studies relative to the processes of transamidination and transmethylation[23] report no significant differences compared with control subjects.

Nevin[14] reports muscle biopsy studies and concludes that energy-yielding phosphate components of myasthenic muscle to be within normal limits. Nevin's data quite clearly shows that energy deficiency is not part of the problem in myasthenia gravis.

Cholinesterase is in normal values in blood serum[25,26]. One necropsy result[27] on muscle showed a low value which, however, could be explained by prior extensive prostigmine treatment. It should be noted that these values include pseudoesterases[48] and are subject to question.

Necropsy studies report inconstant findings[28]. These are: (1) "lymphorrhages" in skeletal muscle and internal organs in about 2/3 of the cases; (2) abnormality of thymus in about 50% of the cases; and, (3) some cases completely negative.

The *in vitro* oxidative metabolism of excised muscle from M. G. subjects is reported by Stare, et al[47]. Muscle from two subjects was found to take up oxygen at subnormal rate. Addition of prostigmine in the test increased uptake for one of the samples, while prostigmine plus ephedrine improved the second.

These results can be rationalized on the basis of certain studies carried out on oxidative metabolism in relation to acetylcholine precursor by Abdon, et al[42]. It was observed that muscle of young rats on a choline-free diet became precursor deficient shortly before the animals died, and such muscle had slow oxygen uptake as measured by methylene blue decolorization. The defect was corrected, either by choline injection to the animal shortly before sacrifice, or by addition of isolated precursor extract to the minced muscle in the methylene blue test. Addition of choline compounds other than precursor to the minced muscle was without effect.

There seems little doubt of a connection in some subjects between the thymus and the symptoms of myasthenia gravis[1,2,29-35]. Torda and Wolff[37] report inhibition of acetylcholine synthesis for extracts of thymus and pancreas. Tests with extracts of various other body tissues were negative in this respect. Mixed results have been reported for thymectomy[1,2].

*Dysfunction in some portion of the endocrine system* is considered a possible basic cause for myasthenia gravis. A possible endocrine relationship might be suspected from the reports that a very substantial proportion of female subjects enjoy remissions[39] during pregnancy.

Torda and Wolff[40] report on a series of hormone investigations initially with experimental animals, followed later by trials on subjects ill with myasthenia gravis. Noting that adrenocortical deficiency leads to thymus hypertrophy, while injection of certain pituitary extracts resulted in thymus atrophy, these workers investigated effects of these hormones on acetylcholine synthesis. They reported that brain tissue from treated animals, as compared with controls, had greatly increased potentiating capacity for the acetylcholine synthesizing reaction tested in vitro. This has now been followed by report[41] of trials of ACTH extracts on five myasthenia gravis subjects having varying degrees of disability. A significant, although incomplete, degree of remission in all cases was indicated by a series of objective muscle tests. Prostigmine intake was voluntarily reduced by an average of 70%. It was stated also that the remissions persisted to the time of writing of the report—a period of three months.

It will be necessary to await additional information before these results can be properly assessed in the etiological picture. Confirmation has not yet been reported in the literature, although we have private communication to the effect that these findings have been confirmed. At the moment, it would appear that an important step forward has been made and additional revealing developments may shortly be expected.

## Summary

1. A review of the numerous investigations of the myasthenia gravis phenomenon strongly supports the early assumptions that acetylcholine shortage is a major factor in the problem, and there is strong suggestion of deficiency at motor end plates.

2. Available experimental evidence tends to eliminate as a factor in the problem a circulating agent which effects myoneural block similar to curare, but points rather to generalized acetylcholine deficiency as the sole cause for the symptoms. There is evidence of a circulating factor, which may in some cases originate with the thymus, but this factor acts on the acetylcholine synthesizing reaction and not on the myoneural junction directly.

3. Defect in the enzyme system which assists energy transfer in the acetylcholine synthesizing reaction is suggested as a probable underlying cause for acetylcholine deficiency in myasthenia gravis. Recent reports of positive effects from administration of adrenocorticotrophic hormone suggests relation of the problem to imbalance or dysfunction in certain portions of the endocrine system.

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# MULTIPLE ABSORBENTS IN THE TREATMENT OF DIARRHEA IN PEDIATRICS

C. Loring Joslin, M. D.,*
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In the past diarrheal diseases have accounted for almost as many deaths among infants as all other causes combined; however, the mortality in infants caused by these diseases has shown a progressive decrease during recent years. This decrease in incidence is no doubt the result of training the parents in the proper methods of preparing, sterilizing and refrigerating the infant's formula, which decreased the incidence of microbial contamination of the infant's food supplies.

Diarrhea may result from one or more of many causes. Diarrheal diseases still challenge the physician. They are major problems from the standpoint of the infant and the older child.

The predominating types of diarhea seen in infants in Baltimore today seem to be proteolytic rather than fermentative in character. The parenteral infections still constitute a problem as etiological factors of diarrhea in infants. The dysentery group of organisms is encountered, but not nearly as frequently as in the past.

When the fermentative type of diarrhea predominated in infants, it was treated with some form of protein milk, but in the proteolytic diarrhea this form of treatment simply prolongs the disease. In the proteolytic type of diarrhea the stools are not very frequent. They have a characteristic foul and offensive odor. They are large and spongy in character and may cause considerable discomfort to the patient. This condition may interefere with growth and good health. Treatment has been discouraging because many cases have a tendency to recur, and others persist for many months.

It is obvious that diarrhea in infants may be of dietary origin, the result of food poisoning or by direct bacterial invasion of the intestinal tract. The bacteria most frequently identified are of the dysentery, typhoid or Salmonella groups.

Therapeutic measures used are many, but the results obtained have been far from satisfactory. There is a need for an effective, safe and acceptable preparation for treating this serious condition.

The solution to this medical problem would seem to be a preparation which would adsorb a major portion, if not all, of the toxic substances in the intestinal tract without adsorbing any nutrient materials. Various types of adsorbing agents have been tried but none have been found satisfactory.

In 1947 I became interested in the clinical application of a preparation containing three adsorbing agents*. This preparation contained polyamine formaldehyde resin, a synthetic aluminum silicate (zeolite), and a synthetic magnesium aluminum silicate, in a base which was found to be palatable to the pediatric patients. This combination had been found highly effective in inhibiting lysozyme[1], removing bacterial toxins of unknown chemical composition and removing the bacteria themselves[2], adsorbing tyramine, histamine putrescine, cadaverine, and indole and skatole[3]. These combined agents were effective in adsorbing paralytic shellfish poisons[4]. Chronic toxicity studies of 6 months duration showed absence of histopathology in rats receiving 10 per cent of their diets in the form of the combined adsorbin agents[5].

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*From the Department of Pediatrics, University of Maryland.

*Resion—Supplied by the Medical Research Department of the National Drug Company, Philadelphia.

It was decided to take 50 consecutive cases of diarrhea irrespective of etiology and treat them with the combined adsorbing agents preparation.

These 50 cases represented:

| | | |
|---|---|---|
| 1. | Proteolytic type | 30 cases |
| 2. | Parenteral infection | 10 cases |
| 3. | Fermentative type | 4 cases |
| 4. | Salmonella infection | 4 cases |
| 5. | Dysentery | 1 case |
| 6. | Diarrhea of newborn | 1 case |

TABLE I

Average age of the 50 patients—13.8 months.
Youngest—one month; oldest—60 months.
Average duration of diarrhea before treatment—11.22 days.
Shortest—1 day; longest—120 days.
Average number of stools per day before treatment—5.3.
Smallest number—4; largest 7.

The 5 cases of infectious diarrhea, 4 salmonella and 1 dysentery, and 3 cases of parenteral infection were first given sulfonamides and penicillin in an attempt to control the diarrhea. When this regimen did not prove effective, they were given the combined adsorbing agents; one tablespoonful each 4 hours. This controlled the diarrhea in every case in 24 to 48 hours.

In the first 6 patients treated, it was determined that teaspoonful doses 3 to 4 times daily were inadequate. This fact is reflected in these cases: 1 case of 120 days duration required 30 days treatment with 4 teaspoonsful daily; 1 case of 18 days duration was controlled in 5 days with 3 teaspoonsful daily, and 1 case of 24 days duration was controlled in 5 days on the same dose. There were 3 cases of 7 days duration, 2 of which required 7 days and 1 case 5 days to bring the diarrhea under control.

Forty-four subsequent patients were treated with tablespoonful doses 3 to 4 times daily. If the diarrhea was severe, a tablespoonful of the adsorbent was given after each bowel movement. No other medication was given, nor were the patients placed on starvation diets.

In all 44 patients the diarrhea was controlled in 24 to 48 hours. In the proteolytic type of diarrhea, which is known to have a tendency to recur, the administration of the adsorbent is continued for several weeks as a prophylactic measure. It was observed that the patients' appetites increased and most of them showed an increase in weight. There were no recurrences in the patients on this therapeutic regimen. No toxic effects were observed.

A resume of the results is presented in Table II.

TABLE II

| Cases | Average Age | Average Duration of Diarrhea | Average Stools per day | Diarrhea Controlled |
|---|---|---|---|---|
| 19 | 14.70 mos. | 5.9 days | 5.3 | 1 day |
| 12 | 8.58 " | 9.5 " | 5.3 | 2 " |
| 6 | 18.70 " | 14.0 " | 5.2 | 3 " |
| 3 | 13.60 " | 9.7 " | 5.3 | 4 " |
| 5 | 6.80 " | 13.3 " | 5.3 | 5 " |
| 6 | 17.00 " | 10.0 " | 6.0 | 6 " |
| 2 | 18.00 " | 6.5 " | 5.2 | 7 " |
| 1 | 60.00 " | 120.0 " | 4.0 | 30 " |

## SUMMARY

1. An adsorbant preparation containing a polyamine formaldehyde resin, an aluminum silicate (zeolite), and a magnesium aluminum silicate, in a palatable vehicle was found to be effective in controlling diarrhea in 50 infants and children.

2. The dose was established at 1 tablespoonful every 4 hours, except in several very young infants, in whom 1 teaspoonful every 3 to 4 hours was found adequate.

3. Most cases of diarrhea were cured within 24 to 48 hours.

4. There were no toxic effects.

5. The adsorbent preparation solicited patients cooperation because of its palatability.

## COMMENTS

The series of clinical cases is admittedly small, but the results were so surprising and gratifying that this preliminary report is being made to stimulate further clinical studies of this combined adsorbent preparation.

11 E. Chase Street

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# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 February, 1950 No. 2

## A. M. A. Dues

The House of Delegates of the American Medical Association at its meeting in Washington, D. C., December 6 to 8, 1949, adopted amendments to the By-Laws of the American Medical Association whereby Division One, Chapter II, Tenure of Membership, has been changed to read as follows:

Chapter 11.—Tenure and Obligations of Membership; Dues.

Section 1.—When the Secretary is officially informed that a member is not in good standing in his component society he shall remove the name of said member from the membership roll. A member shall hold his membership through the constituent association in the jurisdiction of which he practices. Should he remove his practice to another jurisdiction, he shall apply for membership through the constituent association in the jurisdiction to which he has moved his practice. Unless he has transferred his membership within six months after such change of practice, the Secretary shall remove his name from the roster of members.

Sec. 2.—Annual dues, not to exceed $25.00, may be prescribed for the ensuing calendar year in an amount recommended by the Board of Trustees and approved by the House of Delegates. Each active member shall pay said annual dues to his constituent association for transmittal to the Secretary of the American Medical Association.

An active member who is delinquent in the payment of such dues for one year shall forfeit his active membership in the American Medical Association if he fails to pay the delinquent dues within thirty days after notice of his delinquency has been mailed by the Secretary of the American Medical Association to his last known address.

Any former member who has forfeited his membership because of being delinquent in payment of dues may be reinstated on payment of his indebtedness.

The following important changes have been made:

(A) The word "Dues" has been added to the title of Chapter 11.

(B) Chapter 11 has been divided into two sections.

(C) The first sentence of Chapter 11, which read, "Membership in this Association shall continue as long as a physician is a member of a component society of the constituent association through which he holds membership," has been deleted.

(D) The words "of the American Medical Association" have been added after the word "Secretary" where clarification is necessary.

(E) The sentence, "An active member shall pay dues or assessments as may be prescribed by the Constitution or By-Laws," has been deleted.

(F) The words "in the American Medical Association" have been added after the words "shall forfeit his active membership" in the second paragraph of Section 2.

(G) The sentence forming the third paragraph of Section 2, with regard to reinstatement, is a new addition to Chapter 11.

(H) A new paragraph, forming the first paragraph of Section 2, providing for annual dues not to exceed $25.00 has been added to Chapter 11.

*The House of Delegates, on Recommendation of the Board of Trustees, Set the Membership Dues for the Year* 1950 *at* $25.00.

The full effect of the new provisions will have to be studied and developed during the next year. However, the following interpretations of the amended By-Laws are offered at this time:

(a) Active membership in the American Medical Association will continue to be limited to those members of constituent associations who (1) hold the degree of Doctor of Medicine or Bachelor of Medicine, and (2) are entitled to exercise the rights of active membership in their constituent associations as provided in Article 5 of the Constitution of the American Medical Association.

(b) A member of the American Medical Association shall lose his membership in the Association when the Secretary of the American Medical Association is officially informed that a member is not in good standing in his component society *or is delinquent in the payment of the American Medical Association dues established by the above change in the By-Laws.*

(c) Forfeiture of membership in the American Medical Association due to failure to pay dues will have no effect on membership in the component or constituent medical societies unless the component or constituent societies amend their respective constitutions and by-laws. It is, therefore, possible that a physician may be a member of his component and constituent societies and at the same time not be a member of the American Medical Association.

(d) The amended By-Laws provide for the collection of the American Medical Association membership dues by the constituent associations for transmittal to the Secretary of the American Medical Association. The detailed method to be adopted by each constituent association will vary in each state. In general, the method utilized by each state for the collection of its own component and constituent association dues should be followed.

It is planned to provide each member of the American Medical Association a membership card and certificate of membership when his dues are paid.

It will be necessary for the Secretary of the American Medical Association to notify those members who are delinquent in the payment of their dues, and this office will, therefore, require a complete list of all active dues paying members.

No changes have been made in the Constitution and By-Laws of the American Medical Association with respect to Fellowship. Eligibility for Fellowship and annual Fellowship dues of $12.00 remain the same. Under the present By-Laws a Fellow will pay for the year 1950 total membership and Fellowship dues of $37.00.

The following members may be exempted from the payment of the $25.00 American Medical Association membership dues: retired members; members who are physically disabled; interns, and those members for whom the payment of such dues would constitute a financial hardship. No member will be exempted from the payment of his American Medical Association dues who is not exempted from his component and constituent society dues.

## Drop The Reds!

For some months the medical profession has been concerned with the activities of an organization known as AIMS, an abbreviation for the Association of Internes and Medical Students.

AIMS, a national organization, has a chapter in three of the five medical schools in this city.

According to literature distributed on the campuses, its object is the "advancement" of students. On the face of it this sounds like a healthy motive. Even the most conservative could find no fault with a group which would help medical students to become good doctors and thus fit them to minister to the ills of humanity.

But AIMS is directly affiliated with the International Union of Students whose headquarters is in Prague, Czechoslovakia. AIMS makes no attempt to hide the fact; indeed it has, from time to time, actively engaged in collecting funds to send to the International Union of Students which is high on the FBI's list of Communist organizations. Our concern is that American students living in the United States, enjoying the protection and the freedom of this Government, and taking full advantage of the finest educational system in the world, should ally themselves with an outfit that means to destroy all we stand for.

It is a poor business to accept the privileges of American citizenship and at the same time engage in vigorous and active support of Communism.

Yes, it's a free country, the last free country on earth, where the individual can speak and act as he pleases. But there is a great difference between freedom and license. There is free speech in this country—a little TOO free when young men and women, with their vague, loose talk of "international brotherhood," can abuse the United States and aid in the attempt of Communists to ruin the country.

We suggest that AIMS sever its connection with the Reds, the pinks and the fellowtravelers, and confine its activities to the principles of American medicine which has no place for Communism.

Editorial, *Phila., Med.* January 28, 1950.

### Delaware Doctors Honored

At the last Convocation of the American College of Surgeons. Dr. W. Edwin Bird, Wilmington, was elected to the Board of Governors for a three-year term ending in October, 1952. This is the first time a Delawarean has been elected a Governor. At the recent Congress on Medical Education and Licensure. Dr. Bird was elected Vice-President of the Federation of State Medical Boards of the United States.

At the last Convocation of the International College of Surgeons Dr. Raymond A. Lynch, Wilmington, was advanced to the rank of Certified Fellow in the United States Chapter, and a State Regent for Delaware.

## WOMAN'S AUXILIARY

### Mid Winter Report

Our greatest single effort this year is the creation of a Nursing Scholarship for a Delaware girl. A very active committee is working on the plan and the Scholarship will be available to one of this spring's High School graduates.

The New Castle County Ways and Means Committee presented a successful bridge luncheon and fashion show.

The Public Relations Committee has been meeting, and at the request of the Medical Society of Delaware has been compiling a file of speakers on medical health insurance. Individually, Auxiliary members are working with Red Cross, Cancer Control, Girl Scouts, Cub Scouts, P.T.A. and home nursing groups. One member leads a church discussion group of young people and had a member of the state medical society speak on compulsory health insurance.

New Castle County Auxiliary members are sewing for the V.N.A. and are planning a booth for the next county medical meeting. This county group is also sponsoring a Wilmington Drama League play in order to raise money for the Nursing Scholarship.

The Sussex County Auxiliary provides refreshments and a "get together" with the County Medical Society immediately following the regular monthly meetings of both organizations.

Marie S. Fox, President
(Mrs. J. Leland Fox)

## MISCELLANEOUS

### Notice to all Delaware Physicians

The Seizure Control Unit of the Governor Bacon Health Center will be open for patients on or about the 25th of February. One of the features of the Seizure Control Unit is the electroencephalographic department, which has a technician trained by Dr. Joseph Hughes. Dr. Hughes himself will be in direct professional control of the electroencephalographic department, as well as the entire Seizure Control Unit.

The services offered will be for patients in residence at the Governor Bacon Health Center, who will need a period of extended observation to complete the diagnosis and to make available an appropriate medication regime. There will also be an outpatient department in the Seizure Control Unit for patients who are ambulatory, and who are referred by physicians in Delaware, for purposes of electroencephalography, and for assistance in establishing proper medication. This service will be gratis for indigent patients, but there will be a graduated fee, according to the means of those who can afford to pay.

M. A. Tarumianz, M.D.,
Superintendent

Phthisiologists have long agreed that the diagnosis of tuberculosis must rest upon the laboratory demonstration of tubercle bacilli in tuberculous suspects. Francis J. Weber, M.D., Pub. Health Rep., Oct. 1, 1948.

## A Preview Of Socialized Medicine.

Following is a chronological history of a Federal Employees' Compensation case as experienced by a member of The Board of Trustees of the A.M.A.:

July 26—Doctor requested authorization to operate on hernia of occupational origin (bilateral).

Sept. 10—Reply received asking for a report on form CA-32.

Sept. 14—Report mailed.

Nov. 5—Date of order authorizing operation on left hernia only.

Nov. 10—Doctor again requested authority to do bilateral operation.

Dec. 31—Another letter by doctor to government bureau as a tracer to Nov. 10 letter.

Jan. 27—Letter from bureau states the request is quite unusual as one hernia is of long duration, but claim was being referred for decision.

Feb. 8—Date of authorization to operate on left hernia, bureau stating that it did not object to having right hernia repaired at no expense to government, etc.

Ho, hum, and no doubt the doctor expected the check in his Christmas mail — next Christmas, that is.

## The State is My Shepherd

The Congressional Record last week reprinted the following "Psalm to a Taxpayer," which appeared in a small newspaper in the State of Washington. It was edited by John C. O'Brien, a taxpayer:

The State is my shepherd; I shall not want.
It maketh me to pay many taxes so it can keep me in mine old age.
It taketh my earnings; it reacheth into my bank account for its solvency's sake.
Yea, though I struggle with reports unto the dead of the night, I will not catch up; for they are with me always, their penalties discomfort me.
It has obliged me to conduct my business in the presence of its agents; it fills my files with forms; my funds runneth out.
Surely, its rules and regulations shall follow me all the days of my life; and I may dwell in the big house of my uncle forever.

*Wilmington Sunday Star*, Oct. 23, 1949.

## Russia Today

Medical standards in Russia today are poorer than before the 1917 Bolshevik Revolution. That is the admission of Soviet Vice-Commissar Vasili Parrin who added apologetically that "Where only five percent of the people enjoyed good medicine before, now one hundred percent get some kind of medicine."

George Moorad, writing in the November issue of *The American Mercury,* states that Soviet medicine is far behind its proponents' wild claims. To substantiate his charges, the veteran correspondent, who was killed in the recent crash of a KLM airliner in India, quotes the Soviets themselves.

E. I. Smirnov, Minister of Health for the USSR, recently marshalled figures in the "Sovetskaya Meditsina," a restricted magazine, proving that the illnesses of patients in Russian hospitals were being incorrectly diagnosed from fifty to seventy-five percent of the time.

The state of Russian health today, according to international Red Cross estimates, is very poor. 20,000,000 civilians died of starvation and its related effects in World War II.

The late Mr. Moorad says "Unquestionably millions of other deaths were hastened by lack of food, and the effect will be felt for a generation in tuberculosis, bad teeth, faulty bone structure, cardiac ailments, and digestive troubles."

---

The responsibility of the doctor in enabling the patient to gain psychological acceptance of the diagnosis cannot be too strongly emphasized. There is much that auxiliary medical personnel can do, but all that they do cannot equal what the doctor himself can accomplish in helping the patient to develop a constructive attitude toward his illness. The patient "can take it" from the doctor to a degree that no one else can match. The understanding and assurance the patient receives from the doctor have far more effect in creating a frame of mind conducive to successful hospitalization than any help the patient receives from others. William B. Tollen, Ph.D., VA Pamphlet 10-27, Oct., 1948.

### Lighting is Tipoff to a Good Restaurant

Chicago—Adequate lighting is a sign of a good restaurant, says Lawrence McCracken, Rye, N. Y., former member of the bar and tavern sanitation panel of the National Sanitation Foundation.

Watch for clean windows and sidewalks too, he advises in the October issue of *Hygeia*, health magazine of the American Medical Association.

Dim lighting, unsealed cracks in floor covering or around booths, a smell of grease, cracked cups and dishes, and dirty washrooms are indications of an undesirable restaurant, Mr. McCracken points out.

Quality of service is important, he adds. Waitresses and bartenders who pick up glasses by putting their fingers in the top and waitresses who serve food by stacking one dish on top of another are not using sanitary methods. Glasses should be washed instead of merely rinsed, ice and butter should be picked up with implements rather than with the fingers, and silver should be picked up by the hands only.

Balanced meals, fresh salads, and moist meat are indications of good cooking. Brilliantly green vegetables have been cooked with a touch of baking soda which heightens color but washes out flavor, makes food slimy, and may destroy vitamins.

## OBITUARIES

### Louis S. Parsons, M. D.

Dr. Louis S. Parsons, 53, prominent Wilmington surgeon for over 25 years, died in the Delaware Hospital on February 15, 1950 of heart disease, which had caused his retirement from active practice about four years ago. Since then he and his wife had divided their time between Ocean City, Md., and West Palm Beach, Fla. He had been a hunting and fishing enthusiast all his life.

A native of Parsonsburg, Dr. Parsons came to Wilmington from Pennsylvania in 1921 after two years of internship in Episcopal Hospital in Philadelphia. He was born Dec. 14, 1896, a son of the late Granville A., and Laura Adkins Parsons. He studied in the elementary and high schools of Parsonsburg, and took his medical degree at the University of Pennsylvania, graduating in 1919. He was one of the chief surgeons of the Delaware Hospital staff before his retirement.

During his long practice here, Dr. Parsons served as surgeon for the Bureau of Fire, Department of Public Safety; the Pullman Company and other organizations.

In addition to professional memberships, in the New Castle County Medical Society, Medical Society of Delaware, American Medical Association, and the American College of Surgeons, Dr. Parsons was associated with the Medical Club of Philadelphia and the Free and Accepted Masons, in which he held the 32nd degree, Lu Lu Temple, Ancient Arabic Order Nobles of the Mystic Shrine, and the Delaware Consistory.

In 1925 he married the former Ruth Morgan of this city, who survives him. He also leaves a son, Louis Smith Parsons, Jr., and a daughter, Ann Parsons, both students at the University of Delaware.

The funeral took place from the Chandler Funeral Home, Wilmington, on February 18, 1950, with interment in the Methodist Cemetery at Parsonsburg, Md. The Rev. Arthur W. Goodhand, Jr., assistant pastor of Grace Methodist Church, Wilmington, officiated at the services here, and the Rev. D. O. Hornung, pastor of the Methodist Church at Ocean City, Md., had charge of the ceremony at the grave.

### A. Parker Hitchens, M. D.

Dr. A. Parker Hitchens, 72, former Wilmington City Health Commissioner, died at his home in Philadelphia on December 19, 1949, of carcinoma. He had been ill for some time.

Born in Delmar, in 1877, Dr. Hitchens received his M.D. from the Medico-Chirurgical College, Philadelphia, in 1898. He also studied at the University of Pennsylvania, St. Mary's Hospital, London, and Woods Hole, Mass. Three years after graduation he became bacteriologist at the Mulford Biological Laboratories, Glenolden, Pa., where he served as a director for 12 years. He resigned in 1918 to enter the Army Medical Corps.

In 1920 he began research work in the U. S. Public Health Service and became an assistant professor in the Army Medical School. He had held important posts in the school and in Walter Reed Hospital.

From 1925 to 1929, he had extensive experience in the public health administration of the Philippine Islands, where he served on Gen. Leonard Wood's staff as technical adviser in public health and sanitation.

He was also president of the Philippine Leprosy Research Board, and organized the School of Public Health and Preventive Medicine as part of the University of the Philippines.

He had served as president and secretary of the Society of American Bacteriologists, was a member of the Philadelphia College of Physicians, a fellow in the American Association of Military Surgeons, a fellow in the American Public Health Association, and was an editor of various medical publications and author of several books. He was also a Mason.

Dr. Hitchens was a former member of the New Castle County Medical Society and the Medical Society of Delaware, transferring his membership to the Pennsylvania State Society in 1948.

Dr. Hitchens came to Wilmington to head the health department in 1944. He had formerly been chief of the Public Health Department of the University of Pennsylvania, and until recently, he served as head of the Bureau of Laboratories of the Pennsylvania State Board of Health.

During his stay in Wilmington Dr. Hitchens was particularly active in the 1947 polio epidemic. He resigned from the position of health commissioner in September, 1948.

Surviving are his wife, Ethel; son, John of Washington, D. C.; and a daughter, Ethel.

Funeral services were held at the Church of the Holy Savior, Philadelphia, on December 13, 1949.

## BOOK REVIEWS

Human Growth. By Lester F. Beck, Ph. D., Associate Professor of Psychology, University of Oregon. Pp. 124, illustrated. Cloth. Price, $2.00. New York: Harcourt, Brace & Company, 1949.

This is a very interesting and useful little book for doctors, social workers, and teachers whose work brings them in contact with children and parents. It presents in plain language and clear illustrations the story of human growth.

The book is especially useful in teaching adolescents and young persons the fundamentals of sex education through a better understanding of the physiological processes involved in the human body and the interaction of the various glands and hormones.

Many questions and answers are given which explain the normal, healthy development of the body.

### Hebrew Medical Journal

The appearance of Volume 2, 1949 of the *Hebrew Medical Journal* (*Harofe Haivri*), concludes the 22nd year of publication of this bi-lingual, semi-annual Journal, edited by Moses Einhorn, M. D.

Written in Hebrew, with English summaries, the Journal is a contribution to the development of Hebrew medical literature and thus facilitates teaching in the newly established Hebrew University - Haddassah Medical School in Israel.

In this issue a detailed article is presented on Scoliosis by Samuel Kleinberg, M.D., and Prof. Arnold Kutzinski gives a comprehensive survey on the Psychopathological Problems of the Jews in Israel.

There is a special section devoted to Historical Medicine which contains three interesting essays: Medical and Anatomical Terms in the Pentateuch in the Light of Egyptian Medical Papyri, by Prof A. S. Yahuda; Jews as Intermediaries of Medicine and Natural Science During the Middle Ages, by Zussmann Munter, M.D.; Al-Qirqisani's Essay on the Psycho-Physiology of Sleep and Dreams, by Dr. Leon Nemoy.

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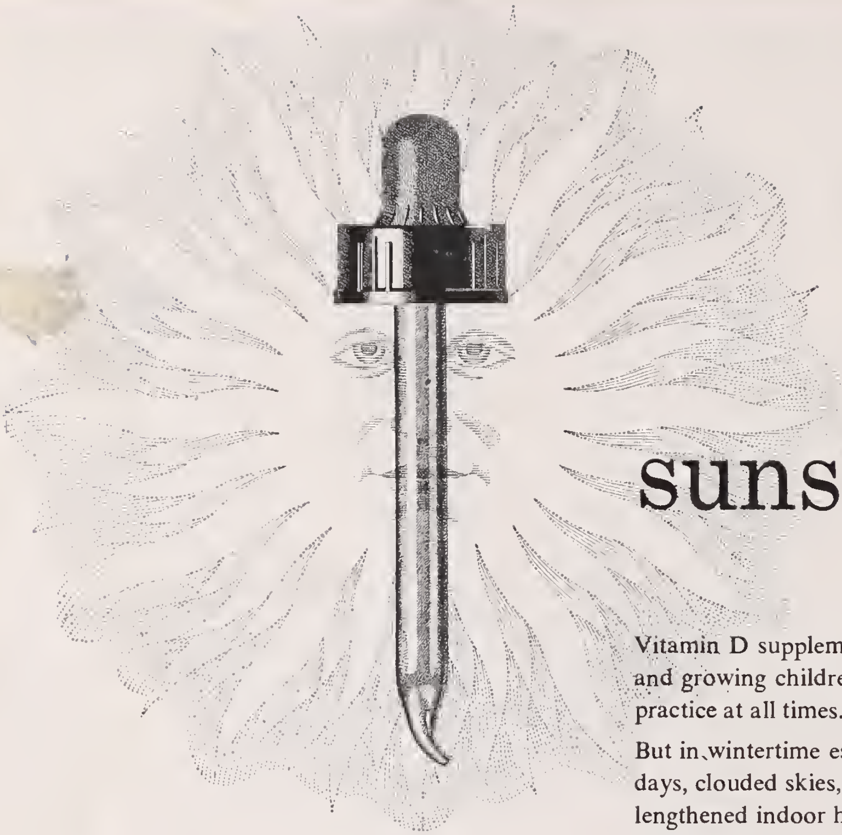

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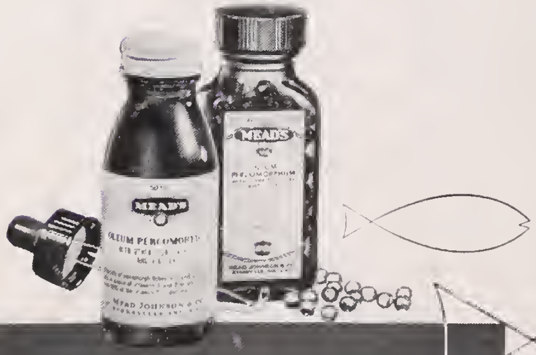

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VOLUME 22
NUMBER 3

MARCH, 1950

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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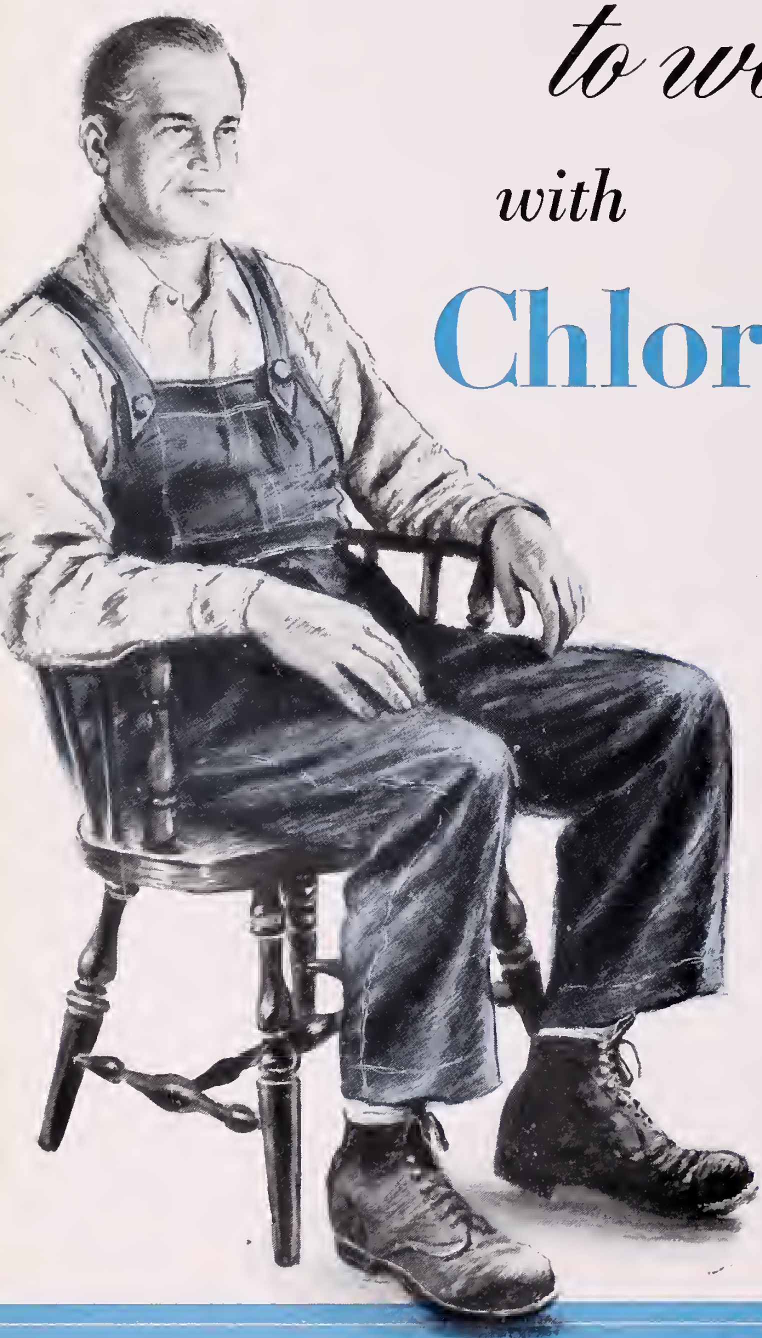

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# DELAWARE STATE MEDICAL JOURNAL

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**VOLUME 22**
**NUMBER 3**

**MARCH, 1950**

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The Professional Staff of the Veterans Administration Hospital, Wilmington, Delaware, gratefully acknowledge the privilege and honor in contributing to the scientific Journal of the State Society.

We are proud of the fine relationship existing with the members of the Society. Our purpose and responsibility is to see that the veteran patient receives the best possible medical and surgical care, and cooperation with the local physicians is of utmost importance.

Dedication ceremonies of the new Veterans Administration Hospital will be at 2 p. m. on April 2, 1950, to which we extend to all members of the Society a cordial invitation. Following the ceremonies a tour of the hospital will be conducted.

M. W. GASPER, M. D., Manager,
Veterans Administration Hospital
Wilmington

# THE ELECTROKYMOGRAM IN ANGINA PECTORIS*

## Preliminary Report

A. HENRY CLAGETT, JR., M. D.,**
Wilmington, Del.

Until recently, angina pectoris has been diagnosed entirely upon the subjective complaints of the patient. Little progress occurred following the classical description of Heberden until the "anginal Q wave" of Pardee. Subsequent experience showed the "Pardee Q wave" to occur for various reasons, frequently in normal individuals. The anoxemia and exercise tests, based upon the principle of bringing out electrocardiographic changes by producing coronary insufficiency, were a great step forward but, as is well known, are of diagnostic value only when positive. The desirability for objective evidence, particularly in cases involving compensation, is obvious, and with this in mind, the electrokymographic findings in coronary disease are being studied.

The electrokymograph was developed at Temple University by Henny, Boone and co-workers, and the fundamentals of electrokymographic interpretation have been described by them.[1-4] Briefly, the apparatus consists of a photoelectric cell which, after being placed in the proper position under fluoroscopic control, will cause the changes in potential resulting from the movement of any shadow to be recorded graphically. In reference to the cardiac border, contraction is represented by downward and relaxation by upward deflections. The curves so obtained have many characteristics of cardiac volume curves and, in many instances, demonstrate many of the different cardiac phases, thereby making the procedure one of excellence in cardiac clinical research.

In 1949 Boone and co-workers[5] studied the phase of ventricular isometric relaxation and suggested the possibility that a prolongation of this phase might be a compensatory measure in the presence of coronary artery disease.*

Sussman and his group[6] in the same year focused attention upon delayed systolic ventricular contraction following myocardial infarction.** In discussing this paper Gillick confirmed the findings but, in addition to myocardial infarction, ascribed them to myocardial fibrosis, myocarditis, ischemia, and biochemical reactions.

The following two cases are presented as having histories typical of angina pectoris with no evidence to suggest myocardial infarction. All objective findings were normal, including the Master two-step exercise test. Abnormalities in the electrokymogram proved to be the only objective findings to substantiate the patient's history.

No. 5452. This 53-year-old white male first developed substernal distress upon exertion at age 44 and, due to the nature of the pain (onset following exertion, relieved by rest and nitroglycerine), a diagnosis of angina pectoris was made. Since 1941, numerous electrocardiograms have been normal. (Fig. 1)

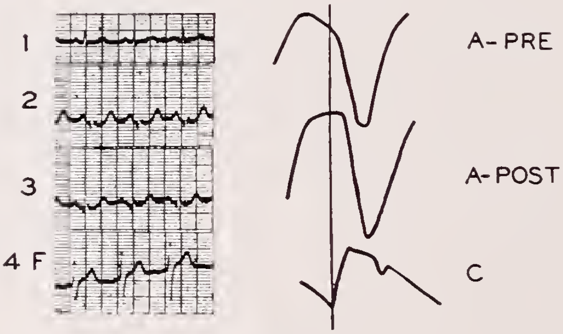

FIGURE 1

Fig. 1. Case 5452. Left — electrocardiogram. Right — tracing taken directly from electrokymogram. A-PRE — apex, pre-exercise. A-POST —apex, post-exercise. C-carotid pulse. Note that in A-PRE the deflection is downword at the instant of the beginning of the upstroke of the carotid pulse; this is normal. In A-POST, there is a delay of 0.04 second from the carotid upstroke to the beginning of the downward deflection; this is abnormal.

Master two-step exercise tests were negative on June 16, 1948 and October 5, 1949. At no time were there any signs or symptoms to suggest myocardial infarction. Repeated examinations showed the blood pressure and heart size to be normal. An electrokymogram taken October 5, 1949 (Fig. 1), showed the ventricular apical pulsation to be normal before exercise but delayed 0.04 second after the Master two-step exercise test.

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*From the Medical Service, Veterans Administration Hospital.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

**Chief of the Medical Service.

The electrokymograph used in this study was a gift of Unit I, Mothers of World War II, Wilmington.

*Unfortunately, the nature of the electrokymogram is such that it is impossible to measure the phase of ventricular isometric relaxation in many tracings. It was impossible to measure this interval in either of the cases presented.

**Experience is demonstrating that this phenomenon may be missed unless tracings are obtained from numerous areas of the ventricles.

No. 4385. This 60-year-old colored male was known to be hypertensive since 1930 but served in the Army until the onset of angina in 1947. This was manifested by a squeezing, burning substernal pain which radiated down both arms, was brought on by exertion and relieved by rest and nitroglycerine. Numerous electrocardiograms showed no abnormality other than Q waves in leads 2 and 3. (Fig. 2) Physical examination was normal except for hypertension, generalized sclerosis, and arteriosclerosis obliterans. Although the electrocardiograms could not exclude an old posterior myocardial infarction, no symptoms to suggest this condition ever were present. Master two-step exercise tests were negative on September 17, 1947 and March 23, 1949. An electrokymogram taken January 18, 1950 (Fig. 2), showed definite lateral motion of the apex during systole, a finding obviously secondary to severe myocardial disease.

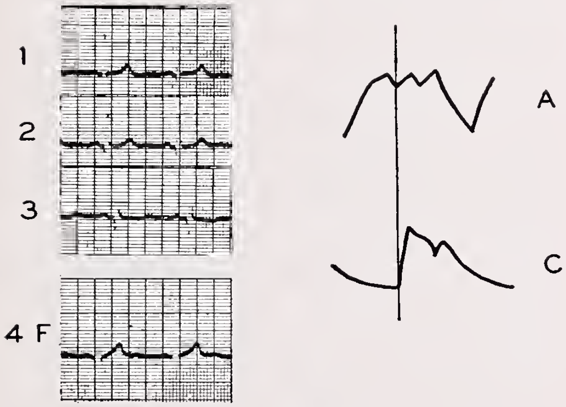

FIGURE 2

Fig. 2. Case 4385. Left — electrocardiogram. Right — tracing taken directly from electrokymogram. A — apex. C — carotid pulse. Note upward deflection at apex coincident with the carotid upstroke and followed by a second similar deflection giving rise to a low voltage "W-shaped" complex.

## Discussion

The above cases presented histories typical of angina pectoris but a lack of objective confirmatory evidence, particularly in the first. Electrokymograms demonstrated abnormal apical pulsations in both. One, however, developed the abnormality only after exercise.

The electrokymogram has been suggested as an additional study of value in patients with coronary artery disease. More study is necessary before conclusions can be drawn, but from the available literature plus my personal observation* its use seems to offer great promise in this field.

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# SUBACUTE BACTERIAL ENDOCARDITIS**

Irvin N. Carroll, M. D.,
Wilmington, Del.

Prior to the discovery of the newer chemotherapeutic agents subacute bacterial endocarditis was attended by a mortality rate of nearly 100 per cent. Since these agents have become available more and more cures of the endocarditis are being reported. It is not the purpose of this paper to review the voluminous literature on the subject but rather to briefly mention some of it and to report two cases treated with antibiotics that are well and able to work, approximately one year after discharge from the hospital.

It is of interest that the disease has been known for almost a century and yet only recently have effective therapeutic agents been discovered. Rokitansky,[1] in 1855, was one of the first to describe the pathological picture of subacute bacterial endocarditis. Virchow,[2] in 1856, developed his theory of embolism after studying the disease. Winge and Heiberg, in 1869,[3] Klebs 1878,[4] Koster 1886,[5] Ormerod,[6] Osler,[7] Horder,[8] Blumer,[9] Libman,[10] and Thayer,[11] among others were all early investigators into this problem. Billings,[12] in 1909 reported positive blood cultures in all of a small series of patients with subacute bacterial endocarditis.

---

*The series at present includes 16 cases of myocardial infarction, 16 cases of sclerosis without infarction, and 9 cases of coronary insufficiency, several with tracings before and after exercise. The results of this study are to be published.

**From the Medical Service, Veterans Administration Hospital, Wilmington.
Reviewed in the Veterans Administration, and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Lichtman[13] in his study of 2500 cases of the disease before sulfonamides and antibiotics reported about 1 per cent spontaneous cures. Some of the more recent reports in which antibiotics were used are very encouraging. Dawson and Hunter[14] found that 30 of 35 patients were clinically well after treatment and observation for a period of fourteen months. Priest et al[15] reported 22 of 34 cases that were well thirteen to thirty-five months after treatment. Kaplan et al[16] reported a series of 18 cases treated with penicillin who were cured of their active endocarditis and were followed for 25 to 61 months after discharge. Of these, 6 showed progressive cardiac disability; 3 died; 12 showed no progression of their cardiac disease. It was the authors' impression that the presence of so-called "dynamic aortic insufficiency" was the cardinal factor in determining whether or not the patients showed no progression of the cardiac lesions or went steadily downhill.

In a recent report on 13,661 autopsies,[17] the incidence of active endocarditis was 2.2 per cent. Of these, 87 per cent were bacterial endocarditis. Of 299 cases, 78 were cases of so-called abacterial endocarditis due to active or recurrently active rheumatic fever. The sex ratio in their series was 4:1 with predominance of males in the bacterial group. They found that aortic valvulitis predominated in the bacterial group and mitral valvulitis in the group of active rheumatic endocarditis. It is of interest that in this series 38 per cent were above the age of 45 years.

In another series of 50 autopsy cases[18] of subacute bacterial endocarditis, 23 showed healed rheumatic heart disease. No congenital or leutic lesions were found in this small group. In yet another series of 58 cases[19] of subacute bacterial endocarditis, over 60 per cent were found to have rheumatic heart disease at autopsy. In a series of 28 cases[20] who came to autopsy and who were over 40 years of age, 51 per cent showed evidence of rheumatic heart disease. The other 43 per cent were made up of arteriosclerotic, luetic, and congenital valvular deformities.

Before the discovery of sulfonamides, penicillin, and streptomycin a wide variety of procedures and drugs were used in an attempt to effect a cure. Cauterization of the chest wall, arsenicals, fever therapy, mercurochrome, gentian violet, vaccines, and many other agents were used without benefit. With the advent of sulfonamides, it was found that the blood became sterilized in some cases, but relapses were very frequent. One of the earliest series treated with sulfonamides was by Lichtman.[13] He obtained 4 per cent recoveries in his series of 498 cases. Later sulfonamides and fever therapy were used with somewhat better success. Lichtman[13] treated 102 cases of subacute bacterial endocarditis, of which 11 recovered (10.7 per cent). Favour et al[21] treated a series of 16 cases of which 4 recovered. When penicillin became available, failures at first were frequent. Apparently this was due to inadequate dosage. After increasing the dosage to from 500,000 to 1,000,000 units of penicillin daily many more cures were being reported. More recently, various agents to block the renal excretion of penicillin have been used successfully in producing higher blood concentrations. Important factors in the treatment seem to be early, intensive and prolonged treatment for four to six weeks after blood cultures have become negative.

## Report of Cases

Case 1. A 26-year-old white male shoe repairer was admitted to this hospital on September 9, 1948, complaining of pain and swelling of the ankles which had subsided a few days before. He had been well except for some generalized weakness and mild exertional dyspnea until May of 1945, when he was found to have rheumatic heart disease. He was hospitalized while in the armed services and later separated after several weeks' treatment. Following discharge from the service, he attempted to work but was unable to continue because of weakness and dyspnea on exertion. About three weeks prior to admission, he developed pain, redness, and swelling of both ankles which subsided within about three days. Otherwise, the systemic review was entirely negative.

Physical examination revealed a well-developed, but somewhat undernourished, white male whose physical findings were entirely normal except for the cardiovascular system. Blood pressure was 112/68; pulse, 90. The heart was slightly enlarged to the left; the rhythm was regular. A soft, blowing diastolic murmur was heard in the second and third intercostal spaces to the right of the sternum and along the left border of the sternum. This was constant and was accentuated by exercise. At the apex a third heart sound, which disappeared following exercise, was present. There were no apical murmurs. The right ankle and left knee were slightly tender but there was no swelling or redness.

Laboratory findings were entirely normal except for a sedimentation rate of 63 mm./hr. (Westergren). Other tests including urinalysis, complete blood count, and serology were negative. Fluoroscopic examination of the heart revealed no enlargement and the electrocardiogram was normal. The patient had a low-grade fever from the time of admission. Blood cultures were taken frequently and a sparse growth of short gram-negative rods were reported on many cultures. At the same time the patient developed several small petechiae on the fingers and toes. The diagnosis was made of subacute bacterial endocarditis, and penicillin in a dosage of 200,000 units every three hours was started.

Four days after penicillin treatment was started, ''caronamide,'' 3 gm. every three hours, was given in an attempt to enhance the blood penicillin level. After five days of ''caronamide'' the patient developed an elevation of temperature, some abdominal pain, and it was thought that at this time he was having a reaction to the drug. This was discontinued and the temperature dropped to normal within 48 hours and the symptoms subsided. Penicillin was continued for a total dosage of 73,400,000 units. Blood cultures became negative ten days following the beginning of treatment. The patient continued to have transient and intermittent stiffness of the left leg. He also had occasional abdominal cramps; otherwise he felt well. An attempt to further identify the organism was made both in our laboratory and in Philadelphia, but it could not be definitely identified. The patient was discharged from the hospital on January 21, 1949, after having numerous negative blood cultures. He was seen three months later and again nine months following discharge, at which time he was perfectly well. Blood cultures taken at these times were negative.

Case 2. A 58-year-old white male painter was admitted on December 10, 1948, with the chief complaints of pains in both legs for many years, loss of appetite, fever, and weight loss of 20 pounds in the past four months. He stated he that was well until August 1948, except for occasional bouts of cramps in both legs. The previous medical history was noncontributory. Systemic review was negative except for leg pains, anorexia, fever, and occasional chilliness.

Physical examination revealed an individual who appeared five to ten years older than his stated age. The head and neck were normal. The pupils did not react to light or accommodation and were of the Argyll-Robertson type. The fundi showed marked arteriosclerotic changes. Blood pressure was 140/76; pulse, 100. The lung fields were clear. The heart was enlarged to the left with the point of maximum impulse in the sixth interspace in the anterior axillary line. A systolic thrill was palpable over the base of the heart. Harsh, grade 4, systolic and diastolic murmurs were present at the base and apex. The liver was barely palpable. Neurological examination revealed absent reflexes in the knees and ankles bilaterally. There was some decrease in the vibratory sensation in both lower extremities. Tabes dorsalis was diagnosed.

The following laboratory tests were within normal limits: complete blood count, blood urea nitrogen, total serum proteins, febrile agglutinations including brucella agglutination, routine urinalyses, stool cultures, spinal fluid examination, serology, chest x-ray, and electrocardiogram. Sedimentation rate was increased to 115 mm./hr. Five blood cultures on successive days all showed a heavy growth of streptococcus viridans.

The patient ran an intermittent type of fever, ranging between normal and 102° F.

Therapy consisted initially of 200,000 units of penicillin every three hours intramuscularly. Cultures remained positive for four days, at which time the dosage was increased to 500,000 units every three hours. Blood cultures taken one day after this increased dosage were negative and remained so thereafter. However, the patient continued to have a low-grade fever and approximately one month after therapy with penicillin was started streptomycin, 0.5 gm. every six hours was added. The temperature became normal within five days following this and remained so. At no time did the patient develop petechiae.

The patient was discharged from the hospital in March 1949 and was again seen in September, 1949, at which time he was perfectly well except for evidence of tabetic residuals. As far as could be determined, there was no progression of his rheumatic heart disease. Blood culture taken at that time was negative.

## Summary

1. For the past decade subacute bacterial endocarditis has no longer been considered the consistently fatal disease that we once knew. This is due primarily to the introduction of the antibiotic agents.

2. Early, prolonged and intensive therapy has resulted in a high percentage of cures in a number of series of cases.

3. Rheumatic heart disease is by far the most common underlying cardiac lesion.

4. Bacterial endocarditis is a common disease in patients over fifty years of age.

5. Two cases are presented. Both are living and well approximately one year following treatment.

6. Case 1 is of particular interest because the organism was a penicillin sensitive gram-negative rod which was not definitely identified.

7. Case 2 is of interest because of his age and also because he has done well for one year in spite of a dynamically significant aortic regurgitation.

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# THE USE OF QUINIDINE IN DAILY PRACTICE*

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Since its introduction into the field of cardiac therapy by Wenckebach in 1914,[1] quinidine has rightly assumed a place of importance. A "double-edged sword," quinidine has been neglected by some while abused by others. This review of its actions, indications, and contraindications is presented in the hope that this important drug will find its proper place in the armamentarium of the general practitioner.

*Pharmacology.* Quinidine is the dextro-isomer of quinine and occurs with the latter in cinchona bark. It is a general protoplasmic poison and acts as a depressant of skeletal and cardiac muscle. Therapeutic doses of quinidine produce changes in the heart which can be summarized as follows:

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Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

(1) The refractory period of cardiac muscle is increased, often by as much as 50 to 100 per cent;

(2) Impulse formation in the sino-auricular and auriculoventricular nodes is retarded; and

(3) The conduction of impulses in the auricles, bundle of His and ventricles is slowed.

These direct actions have secondary effects on the heart, namely:

(1) The myocardial excitability is decreased, mainly due to the increased refractory period;

(2) The rate of the heart is slowed; and

(3) The amplitude of contraction may be increased. This is due to the slower rate resulting in increased diastolic filling of the ventricles. With toxic doses of quinidine or in heart failure, however, the amplitude of contraction may be decreased due to depression of muscular contractility.

*Therapeutic Uses of Quinidine.* Extrasystoles, if asymptomatic, are not an indication for quinidine, with the exception of those following myocardial infarction, where they may signal a more serious arrhythmia. When extrasystoles cause palpitation, heart consciousness and anxiety, quinidine affords relief by decreasing myocardial irritability. Before using quinidine in the control of extrasystoles a search for factors responsible for their presence should be made.

Quinidine has unique value in the therapy of *auricular fibrillation.* It acts by increasing the refractory period of the auricular musculature so that the abnormal impulses find refractory tissue in their path and the arrhythmia comes to an end.

Since Frey[2] first recommended its use in this disorder, much has been written concerning its merits and disadvantages. There is little argument that the best results of quinidine in auricular fibrillation are obtained in: (1) young patients exhibiting little cardiac damage and in whom the arrhythmia is of recent origin; (2) cases of persistent auricular fibrillation *after* thyroidectomy; and (3) patients whose cardiac irregularity causes severe palpitation and where this constitutes their chief complaint even though they are digitalized and their cardiac rate has been slowed.

The controversy revolves around the use of quinidine in the patient with chronic auricular fibrillation associated with organic heart disease. Various workers[3-5] have expressed the opinion that auricular fibrillation is merely a manifestation of the unfavorable progress of otherwise severe heart disease and that in itself it does not materially alter the health of the patient or interfere with cardiac efficiency. Chronic fibrillation of twenty-five years' duration has been reported as occurring without apparent detriment to the patient. This group points out that quinidine frequently has but a short-lived effect and its dangers outweigh its possible advantages. Others,[6-8] however, believe that the development of auricular fibrillation adds to the cardiac insufficiency and carries with it certain dangers. The experimental production of auricular fibrillation in animals reduces the output of the heart by an average of 40 per cent.[9] Frequently one sees patients in whom the appearance of auricular fibrillation is followed shortly by the first signs and symptoms of congestive failure. The dangers of intra-auricular thrombus formation is present as long as the auricles continue to fibrillate.

Recent series in which chronic fibrillation was treated with quinidine show a successful conversion to normal sinus rhythm in 65 to 88 per cent of cases, with few serious toxic reactions.[8, 10-18] Though all the series are as yet incompletely followed, the rhythm remained regular for periods of two to twenty-four months in approximately 50 per cent of patients.

Although the problem is still unsettled and warrants further clinical and laboratory investigation, it is our belief that quinidine should not be used in the patient with chronic auricular fibrillation, there being rare exceptions to this rule.

Quinidine is less effective in *auricular flutter* than in auricular fibrillation. Its use may actually result in an increase in ventricular rate which may be dangerous to the patient. This occurs when the ventricle is able to respond to more auricular impulses as the quinidine slows the auricular rate. Digitalis, therefore, is to be preferred in the treatment of auricular flutter and quinidine should be reserved for use only after the failure of digitalis.

In *paroxysmal tachycardias* of auricular or nodal origin, quinidine is effective by depressing the S-A node or the extra-nodal focus of the abnormal rhythm. The hearts of patients with this disorder are usually in better condition than those with auricular fibrillation. Consequently the contraindications to quinidine are fewer and the required dose is smaller.

Quinidine is the drug of choice in *paroxysmal ventricular tachycardia.* In the vast majority of cases this arrhythmia is indicative of serious heart disease. It is in this condition that the rapid administration of quinidine in large amounts may be necessary as a lifesaving measure. If oral quinidine is ineffective or the patient is unable to take the drug by mouth, intramuscular or intravenous preparations of quinidine should be used. These should be used only by one with much experience with this method as it is not without danger.[19]

Although *ventricular fibrillation* is generally a fatal condition and very likely one of the causes of sudden death following myocardial infarction, it does rarely occur as a transient phenomenon and may be responsible for attacks of Stokes-Adams syncope.[20] When it can be established that syncopal attacks are on such a basis, quinidine may then be effective in preventing them.

Quinidine has been suggested for routine use following myocardial *infarction* to reduce myocardial irritability and arrhythmias of ventricular origin.[21] Smith and his coworkers[22] found that quinidinized dogs withstood coronary ligation better than control animals. Nathanson[23] observed no harmful effects in the routine use of quinidine for six to eight weeks following myocardial infarction. Most observers, however, feel that its routine use is unwarranted, but the appearance of more than an occasional ventricular extrasystole following a myocardial infarction is considered an indication for quinidine because these beats may become frequent and give rise to runs of or sustained ventricular tachycardia, a grave prognostic sign.

Similarly, Beck[24] feels that the preoperative use of quinidine will prevent ventricular fibrillation which is the chief cause for death during cardiac surgery.

*Administration and Dosage.* Quinidine sulfate, the preparation usually employed, is readily absorbed from the gastro-intestinal tract. Experiments show that its maximum absorption takes place in about two hours so that the peak effect may be expected at that time.[25] Most of the action of quinidine wears off in less than twenty-four hours.

Further studies reveal that a fixed daily dose shows cumulation for only three or four days[25] unlike digitalis where a fixed daily dose may show cumulation over a period of two to three weeks. This signifies that any dosage of quinidine which fails to produce the desired effect in three to four days is likely to fail to do so no matter how long it is continued.

In the vast majority of cases quinidine can be administered orally. However, it may be given parenterally where rapid utilization may be lifesaving, or in the patient who is unable to take the drug orally because of coma, gastro-intestinal disturbances, poor cooperation, etc.

While many methods of administration have been recommended, no single dosage schedule is applicable to all cases. The drug should be given in amount sufficient to produce the desired effect but insufficient to cause reactions. Its exact dosage, therefore, depends upon the type of arrhythmia, the urgency of restoring normal rhythm, the development of toxic signs and symptoms, and the individual response to therapy.

It is well to give a test dose of 3 gr. of quinidine sulfate and observe the patient for symptoms of idiosyncrasy or cinchonism. Should these occur, the drug should not be used except as a last resort in unusual instances.

For the less serious arrhythmias, where restoration to normal rhythm is not urgent, 3 gr. may be administered every three or four hours. If this proves unsuccessful after two to three days, the dose may be increased to 4½ or 6 gr.

In patients where rapid quinidinization is necessary, the initial dose of 3 gr. may be increased by 3 gr. every two to three hours. In this way large doses of quinidine may be administered over a relatively short period of time. Massive doses may be necessary, Reich[26] having reported a case responding only after 185 gr. were given in a period of two and a half days.

After normal cardiac rhythm is restored, 3 to 9 gr. of quinidine may be given three or four times a day for several weeks, the dose then being gradually reduced. The daily maintenance dose varies for each patient. In some cases no maintenance dose is necessary, the arrhythmia having been permanently abolished.

*Toxic Reactions.* The undesirable effects of quinidine may be the result of the drug itself or of the diseased heart plus the drug.

Cinchonism may be due to overdosage or idiosyncrasy. Tinnitus, vertigo, blurred vision, photophobia, diplopia, dilated pupils and scotomata may develop. Respiratory distress, asthma or temporary cessation of respirations may occur as may nausea, vomiting, abdominal pain and diarrhea. Headache, fever, apprehension, confusion, syncope, and coma have been noted. Renal damage has been ascribed to quinidine. Rashes and angioneurotic edema may occur. The occurrence of severe toxic symptoms while rare, is a contraindication to the use of the drug except as a last resort.

Sudden death is accepted as a danger of quinidine administration. The mechanism may vary. The hazard of embolism has been overemphasized. Many studies[8, 18, 27, 28] indicate that embolic phenomena occur no more frequently with quinidine therapy than with digitalis or no medication. For example, Viko, Marvin and White[28] reported that in 200 cases of auricular fibrillation without quinidine therapy there were 9 instances of embolic phenomena (4.5 per cent), whereas in 484 cases of auricular fibrillation treated with quinidine, emboli occurred in only 15 cases (3.1 per cent).

Quinidine may cause sudden death by respiratory paralysis, ventricular fibrillation, or cardiac standstill due to paralysis of the sino-auricular and/or auriculo-ventricular nodes. Serial electrocardiograms taken during quinidine therapy will help in determining any toxic effects on the myocardium as well as indicating any encouraging therapeutic results. Because of its depressant action on the myocardium, quinidine causes prolongation of the PR and QT intervals and slurring of the QRS complex.

Paradoxically, tachycardias have been reported as occurring during the course of quinidine therapy. Death from ventricular fibrillation after quinidine probably occurs more commonly than is usually stated, and many fatalities formerly attributed to embolism were probably due to ventricular fibrillation. This has been suggested by electrocardiograms taken before death.

*Contraindications.* Because of the depressant action of quinidine on the S-A and A-V nodes, the presence of pre-existing conduction defects has generally been considered to constitute a definite contraindication to the use of quinidine except when the patient is seriously ill. Other frequently mentioned contraindications are subacute bacterial endocarditis and angina pectoris which has been relieved by the development of auricular fibrillation.

The presence of congestive failure has been cited as a contraindication to the use of quinidine. Askey[8] studied the case reports of 839 patients with auricular fibrillation treated with quinidine and who could be separated into those with congestive failure and those without congestive failure. He found no significant difference in the incidence of sudden death in the two groups. Patients with congestive failure accompanied by auricular fibrillation who have not responded to the usual therapeutic regimen for cardiac decompensation may show a striking improvement on quinidine therapy.

## Summary

The actions, indications, and contraindications of quinidine are reviewed.

Because of its depressant action on the myocardium, quinidine plays a valuable role in the therapy of extrasystoles and tachycardias of both ventricular and supraventricular origin.

By increasing the refractory period of auricular musculature, quinidine is effective in stopping auricular fibrillation. However, in the case of chronic auricular fibrillation associated with organic heart disease the use of quinidine is highly controversial. It is felt that at the present time the evidence warrants its use only in exceptional cases.

Digitalis is the drug of choice in the therapy of auricular flutter and quinidine should be reserved for those cases in which digitalis has been a failure.

Toxic reactions, pre-existing conduction defects, subacute bacterial endocarditis, and angina pectoris which has been relieved by auricular fibrillation constitute contraindications to the use of quinidine.

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## SHOULDER-HAND SYNDROME FOLLOWING CORONARY HEART DISEASE[*]

### Report of Case

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The association of pain in the shoulder region following myocardial infarction is well known, but the shoulder-hand syndrome following infarction was not reported in the literature until 1941, when Askey[1] presented 22 cases with this syndrome.

In 1943 Johnson[2] found that 39 (21.8%) out of 178 consecutive cases of myocardial infarction developed atrophic changes in the hands resembling scleroderma and sclerodactylia. He suggested the term "Post-infarction Sclerodactylia." He attributed the disabling changes in the hands to nutritional disturbances, chiefly anoxia from local ischemia due to vasoconstriction resulting from reflex response to the anginal pain. The shoulder symptoms, in his opinion, were not considered related to the hand changes and were thought to result from voluntary or involuntary splinting of the joints.

In 1948 Steinbrocker et al[3, 6] reported 42 cases with the shoulder-hand syndrome caused by a variety of conditions. Clinically, the common feature was characteristic vasomotor atrophic changes in one or both of the upper extremities. Of the 42 cases reported, 11 were called idiopathic. Nine (9) followed myocardial infarction; the others developed following trauma to the extremity, hemiplegia, herpes zoster, vascular disease, cervical osteoarthritis and panniculitis.

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The explanation of the neurophysiologic mechanism by which the shoulder-hand syndrome can be produced by various pathologic states is presented in detail by Lorente de No[4] and Livingston[5].

### Mechanism

The mechanism of the shoulder-hand syndrome has been summarized by Steinbrocker and his co-workers as being due to widespread disturbances of the internuncial pool. This pool is composed of a network of widely connecting neurons in the gray matter of the central nervous system, particularly the spinal cord. Reflex pathways are thus established by way of the afferent impulses and the sympathetic neurons and anterior horn cells to many segments of the spinal cord. Stimuli arising in the heart reach the spinal cord segments $T_1$-$T_4$ by way of the cardiac nerves. Here the internuncial pool is activated and the impulses may travel upwards and downwards to involve the anterior horn cells and the posterolateral column sympathetic neurons at different levels, resulting in disturbances which cause reflex dystrophy of the extremities involved.

### Symptoms

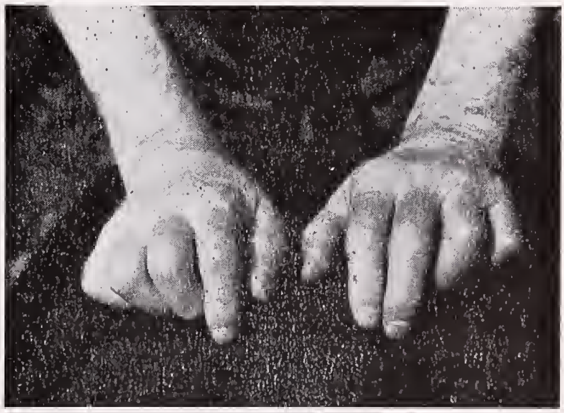
These usually arise within 3-16 weeks following myocardial infarction, and may be divided into three stages. The syndrome may occur in myocardial insufficiency without infarction, but by far the majority occur after definite infarction. Either or both of the upper extremities may be involved.

The *first stage* is characterized by swelling, pain, tenderness, increased heat and discoloration in the involved extremities. This may disappear or may progress to the *second stage*, at which point the swelling subsides but pain and stiffness become progressively worse. The hands are cold, the skin becomes thick and attached to the underlying tissues. Muscle atrophy occurs and trophic changes develop in the bones of the hands and shoulder joints as well, at times. The process may be reversible at this point but often progresses to the so-called *third stage*. Here one finds claw-like contractures due to shortening and thickening of flexor tendons and palmar fascia. The hands become stiff, hard, cold, and dull rather than shiny as in the earlier stages. These changes resemble those seen in sclerodactylia due to other causes.

### Case Report

A 55-year-old mail carrier was admitted to the hospital on May 4, 1949, complaining of substernal oppression, shortness of breath on exertion, stiffness and partial loss of function of the fingers of both hands. There was also some limitation of motion in the left shoulder. He had been well until the 25th of February 1948, at which time he developed severe precordial pain while at work. A diagnosis of acute posterior myocardial infarction was made, and the patient was treated at home for six weeks. After becoming ambulatory, he continued to have substernal pain and shortness of breath intermittently. There was no history of rheumatic fever. He had complained of "arthritis" involving both hands and shoulders since April 1948, the symptoms having developed within 7-8 weeks following the infarction.

The general physical examination on admission revealed nothing af significance except for a rough, blowing, systolic murmur at the apex, definite limitation of motion involving the left shoulder, and marked flexion contractures of the fingers of both hands, resulting in "claw-like" deformities (Fig. 1). The overlying skin was thickened, and firmly attached to the underlying structures.



Routine laboratory studies, including blood count, serology and urinalysis, were entirely normal. The lung fields were clear on x-ray and physical examination. The heart did not appear enlarged. X-ray of the hands and shoulder showed moderately advanced osteoporotic changes. The electrocardiogram was normal. However, the old tracings were obtained and showed a definite posterior infarction in February, 1948. The dermatology consultant saw the patient and made a diagnosis of sclerodactylia involving both hands. The patient was presented at a dermatology conference in another city, where the diagnosis was concurred in. An orthopedic consultant recommended physiotherapy and elastic traction for the fingers, and devised splints for this purpose for both hands.

After approximately two and one-half months of treatment, there was marked improvement in the disability of the hands and shoulders. The patient was able to use his fingers, but was not able to perform any of the finer movements. He was discharged three months after admission and continued to wear the finger traction apparatus intermittently, with slowly progressive improvement in function up to the time of our last communication in December, 1949.

### Summary

1. The shoulder-hand syndrome occurs in approximately 20 per cent of patients having myocardial infarction.

2. The reversibility of the process may be possible in the early stages, but becomes difficult after contractures have developed.

3. The internuncial pool disturbances are considered important factors in the causation.

4. A typical case is presented with reflex dystrophy of both upper extremities.

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## PHEOCHROMOCYTOMA*

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The purpose of this paper is to briefly review the literature on this subject, and to present a case.

Pheochromocytomas are tumors of the chromaffin system and are most commonly found in the adrenal medulla, but may occur in other pheochrome tissues. The adrenal medulla is derived from the sympathetic nervous system. The primitive cell (sympathogonia) gives rise to two types of cells, the sympathetic ganglion cell and the pheochromocyte. The latter cell shows an affinity for chrome salts, and from this cell type the chromaffin system develops. Chromaffin cells are found not only in the adrenal medulla, but also in the intrathoracic chain, retroperitoneal tissues, sympathetic ganglia along the aorta, the carotid body, Zuckerkandl's organ, and in the intestinal wall.

The pheochrome cells secrete epinephrine and tumors arising from them have been variously called pheochromocytomas, chromaffinomas, and paragangliomas. These tumors are most often unilateral and are usually benign. However, in a series of 152 cases of the tumors reported by MacKeith,[1] 9.7 per cent were bilateral and 9 per cent were malignant. Multiple tumors have frequently been recorded.[2] The extra-adrenal chromaffinomas usually do not produce hypertensive symptoms, but may.

The incidence of pheochromocytoma is equal in both sexes. It occurs in all age groups but is most frequently reported between the ages of 20 and 50. The size of the tumors described in the literature varies from 13 to 2,000 gm. The average tumor has been said to be the size of a small orange.

The cardiovascular symptoms produced are due to a pressor principle having an epinephrine-like action. Assays of the epinephrine content of the tumors vary from 0.12 to 20 mg. per gm., while normal adrenal medulla contains about 0.4 mg. per gm. of tissue.

The pheochromocytoma is a relatively rare tumor, but with improved diagnostic methods it has been reported more and more frequently in the past few years.

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Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

In 1886 Frankel[3] reported an autopsy finding of bilateral adrenal pheochromocytomas in an 18-year-old girl. For three years prior to her death, she had paroxysmal attacks of palpitation, headaches, and vomiting.

The first complete clinical description was made by Labbe, Tinel, and Doumer.[4] They reported the case of a 22-year-old woman who had violent headaches, vomiting, tremor, palpitation, and paroxysmal hypertension. She died of acute pulmonary edema. An autopsy revealed a pheochromocytoma of the left adrenal.

In 1926 Vaquez and Donzelot[5] reported a case of a 37-year-old male in whom the diagnosis of pheochromocytoma was made because of paroxysmal hypertension.

In 1927 Mayo[6] reported a woman with severe attacks of dyspnea, headaches, tachycardia, vomiting, and paroxysmal hypertension. An exploratory laparotomy was done because of the abdominal symptoms and a tumor of the left adrenal was found. The patient improved following surgery. The tumor was called "malignant blastoma."

The first clinical pre-operative diagnosis, followed by a successful operation and symptom-free survival, was reported in 1929 by Pincoffs.[7]

In 1937 Beer, King, and Prinzmetal[8] demonstrated an increased amount of epinephrine in the blood of a patient during an attack of paroxysmal hypertension. In 1944 MacKeith reviewed 152 reported cases of adrenal pheochromocytoma and since then a few additional cases have been added to the literature.

The clinical syndrome is produced by the release of an epinephrine-like substance from the tumor. The symptoms are similar to those that follow the administration of large doses of epinephrine. MacKeith concluded from his review that these tumors may cause one or more of the following pictures:

1. Recurrent paroxysms of generalized vasoconstriction accompanied by transient hypertension—the adrenal-sympathetic syndrome.
2. Chronic hypertension with renal and cardiac failure, thus resembling malignant hypertension.
3. Addison's disease from local pressure on the adrenal cortex (an uncommon picture).
4. No symptoms whatsoever.

When the patient is first seen the complaints usually date back several years. The paroxysmal attacks, which are common, usually are mild and infrequent, and the blood pressure readings are found to be normal between attacks. Subsequently, the paroxysms become more frequent, severe, and the blood pressure may become presistently elevated. The frequency of the attacks varies greatly and may last from a few minutes to several hours.

In about 50 per cent of MacKeith's series there were no special precipitating factors that could be determined; in others, however, the attacks were found to be brought on by exertion, emotion, postural changes, and by pressure directly on the tumor.

The typical paroxysm is characterized by a sudden generalized vasoconstriction that produces local and generalized symptoms. Palpitation, substernal constriction, throbbing in the temporal regions, headaches, weakness, gastro-intestinal disturbances, sweating, shock, pallor, numbness, tingling and coldness of the extremities are some of the common symptoms. Severe episodes may terminate in death from cerebral hemorrhage, shock, or pulmonary edema. Electrocardiograms have been found to show various types of arrhythmia, QRS slurring, and T wave changes.

The systolic and diastolic blood pressures rise during an attack and may reach as high as 300 mm. of mercury systolic and 150 mm. or more diastolic.

Hyperglycemia and glycosuria are frequently found during the acute attacks. Following the episode, patient is usually weak, exhausted, and perspiring profusely. Frequent and severe attacks may eventually produce cardiac hypertrophy, retinal and renal changes such as are found in essential hypertension.

The diagnosis of pheochromocytoma, when it is characterized by episodes of paroxysmal hypertension, is usually not difficult; however, at times the paroxysmal nature of the hypertension is not present, and the picture resembles that of ordinary essential hypertension. Pheochromocytomas have been found incidentally at post-mortems[9] or during surgery. In these cases the differential diagnosis is often very difficult.

In the differential diagnosis hyperthyroidism, diabetes mellitus, hysteria, coronary occlusion [10] and cardiac neuroses have occasionally been confused.

The diagnosis of pheochromocytoma depends on a good history, the physical examination, (especially during the paroxysms), and on certain additional studies which will be mentioned briefly. Palpation of the tumor, precipitation of attacks by massage over the adrenal regions, localization of the tumor by intravenous and retrograde pyelography, perirenal insufflation of air (as advocated by Cahill[11]), and laminagraphy[12] are all diagnostic aids. Demonstration of pressor substances in the blood of the patient during attacks has been described by Beer, King, and Prinzmetal. Intravenous injection of histamine base, as advocated by Roth and Kvale,[13] has been found to induce attacks of paroxysmal hypertension within a few minutes in patients with pheochromocytoma. This test is found to be normal following removal of the tumor.

The benzodioxane test, as developed by Goldenberg, Snyder and Aranow,[14] is based on the adrenolytic action of this drug. The increase of epinephrine in the circulating blood in the presence of pheochromocytoma is counteracted by benzodioxane, and the blood pressure is found to drop. In hypertension from other causes, a minimal effect or a purely pressor response is produced in that the blood pressure may remain elevated.

Following the administration of 30 mg. of 2,4 dimethyl piperidyl-methylbenzodioxane, or 10 mg. of piperidyl-methlybenzodioxane per square meter of body surface, over a two-minute period intravenously, both the systolic and diastolic blood pressures are found to be reduced 50 to 70 mm. in mercury. Other adrenolytic drugs have been found to produce a similar reduction in the blood pressure.

Recent research on the physiology of epinephrine and nor-epinephrine in human subjects, using the right heart catheterization method,[15] has shown that epinephrine acts as an overall vasodilator and causes hypertension only by increasing the cardiac output. Norepinephrine, on the other hand, has been found to be a vasoconstrictor which effects the cardiac output little or none; thus its action has been ascribed as being similar to that of various synthetic pressor amines.

The treatment of pheochromocytoma is surgical and consists of the removal of the tumor. Unless there are multiple tumors which remain undiscovered, complete cure usually follows surgical extirpation. The operative procedure is rather hazardous, and the mortality rate during operation has been reported to vary from 15 to 40 per cent in various series.

The following case report of a patient who survived operation, and who is apparently cured at present, is presented:

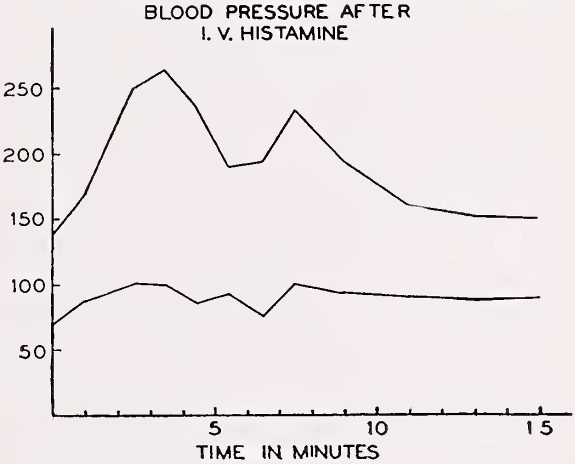
## Case Report

A 26-year-old white male carpenter was admitted to the hospital on April 11, 1949, with the complaints of recurrent attacks of headache, palpitation, shortness of breath, and nervousness. These attacks had occurred irregularly and paroxysmally since November 1946, at which time he was in the Army. He recalled that the first episode lasted about five minutes. He was hospitalized and studied fairly completely. This included x-ray of the chest, frequent blood pressure determinations, ECG with exercise tolerance test, and other routine laboratory procedures. The information obtained was of no help in the diagnosis, and he was finally discharged from the Army hospital with the diagnosis of ''neurocirculatory asthenia.'' After leaving the hospital he continued to have paroxysms at intervals of two to four weeks. However, he did not report for further hospitalization. After discharge from the service, he obtained employment and was able to hold his job in spite of having attacks at intervals of three to four weeks.

About two months prior to his admission to this hospital, the frequency of the attacks increased to as many as four per day. There were no known precipitating factors. Nocturnal episodes occurred frequently. He was studied by a private physician who saw him during one of the attacks and found a marked hypertension which subsided within a few minutes. He described the typical episode as beginning abruptly and usually with a mild headache which increased in severity and became throbbing in type. Following this there was heart consciousness, and the patient noted that his pulse was rapid. At the height of the attack there was shortness of breath and apprehension, associated with a feeling of warmth. The attacks subsided gradually and usually lasted from one to five minutes, following which he felt quite well. Systemic review on admission was entirely negative except for the paroxysmal attacks as described. Past medical history revealed amebic dysentery in 1947 and removal of a benign tumor from the coccygeal region in 1942.

Physical examination on admission was entirely normal. Blood pressure was 130/80, pulse 80, respirations 18. The routine laboratory studies, including complete blood count, blood cholesterol, fasting blood glucose, tolerance test, urinalysis, BMR, serology, and x-ray of the chest were entirely within normal limits. An IV pyelogram was done and revealed that the left kidney was larger than the right. The upper pole of the left kidney was not well visualized. On x-ray, there also appeared to be slight enlargement of the spleen and liver. Contrast material was rapidly excreted by both kidneys. X-ray of the skull was normal.

Shortly after admission the patient began to have frequent attacks of paroxysmal hypertension, averaging five or six a day. Many of these were witnessed by the ward physician. During these episodes it was found that the blood pressure rose abruptly from the average normal of 130/80 to as high as 260+/150. The pulse rate usually remained within normal limits. The average duration of the attacks was approximately five minutes, after which the symptoms gradually subsided and the blood pressure dropped to normal. Several ECG's taken during these attacks were entirely normal, except for occasional tachycardia. On several occasions, it was attempted to precipitate a paroxysm by suggestion and by the use of parenteral placebos. This was unsuccessful. Later, an intravenous injection of histamine containing 0.0083 mg. of histamine base and 10 cc. of normal saline was given. Within one minute the patient developed a slight headache and the blood pressure, which had been 128/76, rose to 150/94. Two minutes after injection, the blood pressure was 154/94, and reached normal in eight minutes. One day later a second injection containing 0.025 mg. of histamine base was given. The blood pressure was checked at frequent intervals. The base line blood pressure averaged 138/70 on several determinations prior to histamine. The results are shown in Fig. 1. An ECG taken during the provoked episode showed a tachycardia and a transient first degree A-V block which has been reported previously following injection of histamine.[1]



Repeated attempts to precipitate an attack by deep massage over both kidney regions was unsuccessful. Laminagraphic studies done at another hospital revealed the following:

> "There is presumptive evidence of an enlargement around the upper pole of the left kidney. The lower pole has a normal aspect but the upper pole is not well defined. It is distinctly larger than the appearance of the same part on the right and a sharp outline has not been obtained."

Priscoline was administered in divided doses daily to see if the frequency of the attacks could be reduced. There was a significant decrease in the frequency, duration, and severity of the episodes while on this drug.

With this presumptive evidence of pheochromocytoma in the region of the left adrenal gland the patient was transferred to another hospital for surgical exploration. Perirenal air insufflation was done before operation. At operation a somewhat cystic tumor measuring 6 x 6 x 7 cm. was found, involving the upper pole of the left adrenal gland. This was removed completely. No other tumors were found. During the operation the blood pressure rose to 290/80. Benzodioxane, sodium nitrite, and amyl nitrite were used to control the severe hypertension during the operative procedure. Five hours post-operatively, the patient's condition was excellent and the blood pressure was 120/78.

An analysis of the tumor by partition chromatography on filter paper was done by Dr. Marcel Goldenberg, of Columbia University, and reported as follows:

> "The tumor contained per gm. of tissue 1.53 mg. of epinephrine and 2.47 mg. nor-epinephrine which gives a ratio of 38 per cent epinephrine to 62 per cent nor-epinephrine. The total weight of the tumor was 92 gm., making the total amounts of epinephrine 141 mg. and nor-epinephrine 227 mg."

After being discharged from the hospital where the surgery was performed the patient returned to this hospital and was examined for evidence of his previous disease. An attempt was made to provoke an attack as had been done prior to operation, using 0.025 mg. of histamine base intravenously. This was unsuccessful. The blood pressure remained normal. Seven months after operation, the patient remains perfectly well.

### SUMMARY

1. A case of pheochromocytoma with complete remission of symptoms after operation is reported, and a historical review on this subject is presented.

2. Differential diagnosis and tentative tests for pheochromocytoma are discussed.

3. Administration of "Priscoline" in divided doses reduced the frequency and intensity of the paroxysmal attacks in this case.

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## DISORDERS OF THE GASTRO-INTESTINAL SYSTEM SIMULATING CARDIAC DISEASE*

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It is well known that serious cardiovascular disease frequently may be manifested only by symptoms referable to the gastro-intestinal tract. The "acute indigestion" of coronary thrombosis and the nausea and vomiting and right upper abdominal discomfort of cardiac failure are but two examples. A class of patients equally important but more frequently overlooked are those in whom symptoms referable to the heart are the presenting manifestations of a gastro-intestinal disorder.

Pathological conditions of the alimentary tract may be confused with cardiac disease because of the anatomical location of the organs or because of various nerve pathways. Some organs are supplied by specially concentrated groups of nerve fibers or by diffuse pathways,[1] and it therefore is possible for pain originating in an organ below the diaphragm to involve a segment of spinal cord or dermatome which receives afferent nerves from the heart. The heart, coronary vessels, and aorta are supplied by T1 to T4 of the left spinal cord segment.[2] The gallbladder, for example, although more commonly supplied by T7 to T9 on the right, has been demonstrated to have afferent pathways from T1 to T12 on the right and T5 to T10 on the left. Other viscera also vary in their afferent nerve pathways.

Another theory is that gastro-intestinal disease, by means of visceral afferent fibers through the vagus and phrenic nerves, may reflexively cause vasoconstriction of the coronary arteries and the pain, therefore, is due to coronary insufficiency.

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Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Lesions of the esophagus most frequently simulate cardiac disease because of its anatomical relationship to the heart. The discomfort caused by malignancy of the esophagus, spasm, esophagitis, peptic ulcer, or diverticula of the lower portion is substernal in location.[3] Frequently, because of variations in afferent nerve supply, as noted above, pain may be referred to both areas usually associated with cardiac referred pain; i.e., the pectoral region and left arm. Dysphagia and association of symptoms with food intake rather than activity or excitement may aid in differentiating esophageal from cardiac disease. Further helpful studies are the x-ray and esophagoscopy.

Perforation of the esophagus usually follows a heavy meal or alcoholic excess and is manifested by violent retching and severe pain which increases in the early stages.[5] Cyanosis and dyspnea, commonly associated with cardiac disease, are usually absent. This condition was first described by the Dutch physician, Boerhaave,[6] in recounting his treatment and post-mortem examination of a prominent person. X-ray examination may reveal an extra esophageal collection of air and fluid. Esophagoscopy usually is impossible due to the severity of the symptoms and an electrocardiogram, if technically correct, frequently will be nondiagnostic. Great quantities of food frequently contaminate the mediastinum and the operative approach, immediate or delayed, must be determined by the degree of mediastinal involvement. Gott[7] states that forceful vomiting rarely ruptures a normal esophagus, an average of 5 to 11 pounds of water pressure being required.

Diverticula of the lower esophagus may cause pain beneath the lower sternum and may be referred to the interscapular region.[4] Frequently, however, these lesions are discovered as incidental findings during the course of a gastro-intestinal survey. The symptoms occur in episodes involving vomiting in about 50 per cent of the cases with weight loss and dehydration.

Peptic ulcer of the esophagus is usually associated with congenital or secondary short esophagus and variable degrees of hiatus hernia.[3] The pain is usually burning and is caused by regurgitated acid through an imperfect cardiac sphincter, particularly when the patient is lying down at night. These patients usually respond to the treatment of peptic ulcer, but when this is ineffective, operative correction may be necessary.

Cardiospasm frequently is associated with dilatation of the esophagus or achalasia. Interference with normal peristalsis is attributed to sympathetic preponderance; atropine frequently aggravates the condition. Dilatation of the cardiac sphincter may result in relief of symptoms. Associated esophagitis should be treated as any other inflammation of the gastro-intestinal tract.

When a diagnosis of malignancy of the esophagus is made, early radical surgery is the only treatment offering any hope to the patient.

Hiatus hernia varies from the small para-esophageal hernia to the massive type in which the entire stomach and portions of large and small intestine may protrude through the diaphragm into the chest. The occurrence of chest pain in such conditions is not difficult to understand, and a small incarcerated hernia will usually give severe pain while a large defect may exist for years with no symptoms whatsoever. While the diagnosis of the large hernia is simple by x-ray, the smaller type is usually demonstrated with great difficulty. The small hiatus hernia may become temporarily or permanently incarcerated and may cause pain without dyspnea, dysphagia, and frequently may cause a sensation of having swallowed ''something hot;'' also shoulder and arm pain in 50 per cent of cases. Special procedures such as having the patient swallow barium while in the Trendelenburg position and taking films from different angles with compression may be necessary. Characteristic symptoms are substernal pain, frequently burning in character, which is relieved when the patient assumes the upright position. Sedation and antispasmodics rather than nitrites may prove helpful.

Gaseous distention of the stomach or splenic flexure of the colon due to elevation of the left dome of the diaphragm with pressure upon the heart may cause a feeling of pressure or distress in the left chest.

Pylorospasm may cause substernal pain, but in the absence of associated esophageal spasm or marked distention of the stomach, this pain does not tend to radiate to the left arm.

The co-existence of biliary tract disease and coronary artery disease is significantly greater than is to be expected from the relative incidence of the two diseases.[8] Regardless of the theories concerning some common lipid or endocrine abnormality, the fact remains that cardiac symptoms and even cardiac decompensation have been relieved following gallbladder surgery.[9] Marked T wave inversion with prolongation of the QT interval ascribed to cardiac disease has disappeared following gallbladder surgery. It is well known that bradycardia follows jaundice. Other more complex arrhythmias have been noted during the course of infectious hepatitis[10] but have disappeared coincidental with clinical recovery.

The above are but a few of the gastro-intestinal disorders simulating cardiac disease. Acute pancreatitis, perforated ulcer, peritonitis, bowel obstruction, or infarction of some abdominal organ may simulate coronary artery disease.

There is no single laboratory test of great aid in diagnosis. Electrocardiographic changes have been reported in many gastro-intestinal conditions such as bleeding from peptic ulcer[11], perforated gastric ulcer,[12] hyperperistalsis of the intestinal tract,[13] and experimental visceral stimulation.[14]

## Summary

Gastro-intestinal disease frequently is manifested only by symptoms referable to the cardiovascular system. These symptoms may be due to proximity of the abdominal organ to the heart with transmission of impulses through various nervous pathways or, reflexively, the gastro-intestinal disease may cause spasm of the coronary arteries with pain due to actual coronary insufficiency.

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Chronic senile phthisis is a condition which may drag on for years unsuspected, and the patient may come to be regarded as just another chronic bronchitic. The patients and their relatives are often so accustomed to their symptoms, and have had so little help from medicine, that they are averse to again visiting their doctor for a detailed overhaul, and the true state of affairs is only brought to light when some young member of the family develops acute tuberculosis, possibly meningitis, and all contacts are reviewed. Then the damage is done; for the sputum of the supposed chronic bronchitic is found to be loaded with tubercle bacilli. W. A. Lister, M.D., The Lancet, April 30, 1949.

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A person with tuberculosis has many needs and before we can meet them we must understand them fully. Medical treatment is, of course, the obvious essential. But also to be considered are many factors which have a bearing upon the way a patient responds to his particular therapy. What are these factors? What facilities do our communities have to deal with them? Most patients face a variety of psychological, financial, and personal adjustments which cannot be separated from one another. Emotional reactions to the disease itself influence the acceptance of the diagnosis and treatment. Robert J. Anderson, M.D., Pub. Health Rep., June 3, 1949.

# ✚ Editorials ✚

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Vol. 22 March, 1950 No. 3

## Welcome—V. A. H.

In this issue we present herewith for the first time a number, the scientific contents of which have been contributed by the Veterans Administration Hospital. It is meet and fit that this outstanding medical plant with an outstanding medical staff and equipment should be willing and able to gather together several splendid papers for one issue of The Journal. They have seen fit to contribute six papers dealing with cardiac conditions, all of them timely and of interest. In accordance with an old rule of the Publication Committee the cover carries the legend since the hospital contributed 75% of the scientific text "V. A. Hospital Number."

We have every expectation that The Journal and the V. A. Hospital will be able to carry this V. A. Hospital Number as a regular feature each year.

In 1945 The Journal began the custom of having the various hospitals throughout the state contribute scientific papers for certain designated issues. The schedule, as originally set up in February, 1945, has been altered but little and at present is as follows:

January, Delaware Hospital
February, Wilmington General Hospital
March, V. A. Hospital
April, Memorial Hospital
May, St. Francis Hospital
June, Downstate Hospitals
July, Delaware Hospital
August, Delaware State Hospital
September, State Board of Health
October, Memorial Hospital
November, St. Francis Hospital
December, Downstate Hospitals

With this somewhat rigid schedule the hospitals should never be at a loss to know when their issue is to appear. The only other thing to remember is that copy for each particular issue is to be sent to the editor no later than the 20th of the previous month.

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## Motto of the Month

A good thing to remember
And a better thing to do
Is to work with the construction gang
And not with the wrecking crew.

## Doctor of Industrial Medicine

Chicago—The first degrees of Doctor of Industrial Medicine ever awarded were granted three doctors last month by the University of Pittsburgh School of Medicine.

The occasion was hailed as a "historic step forward in the recognition of industrial medicine and surgery as one of the great and recognized specialties in the medical profession" by Dr. J. D. Willems, of the American Association of Industrial Physicians and Surgeons.

The three men who were graduated from the specialized post-graduate course were Drs. Harley S. Gibbs, Dolor J. Lauer and James H. McDonough.

Gibbs was graduated in medicine from Pittsburgh in 1945 and is now in charge of the medical division of Carnegie Illinois Steel Corporation.

Lauer took his M.D. at the University of Minnesota in 1938. He is now medical director of the National Lead Company and is doing research in occupational diseases at the Kettering Laboratories of the University of Cincinnati.

McDonough took his M.D. at the University of Pennsylvania in 1942 and is now medical director of the Rome Cable Company, Rome, N. Y.

Lauer and McDonough took the advanced course under fellowship grants from the James S. Kemper Foundation. The Foundation was represented at their graduation by H. L. Kennicott, secretary of the Kemper group of insurance companies, and Dr. Willems, chief surgeon of the companies and a member of the fellowship committee of the American Association of Industrial Physicians and Surgeons.

Gibbs studied under a fellowship granted by the Mine Safety Appliance Company, which was represented by the company's president and treasurer, George H. Deike.

Dr. Alfred H. Whittaker, of Detroit, president of the AAIPS, was among the guests at a pre-convocation lunch given by Dean William S. McEllory, of the University of Pittsburgh's School of Medicine, and D. T. Lyle Hazlett, head of the School's department of industrial medicine.

Dr. Willems characterized the awarding of the new degree as "an event of significance to labor, employers, and insurance carriers under workmen's compensation and occupational diseases acts."

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## Postgraduate Institute

The Philadelphia County Medical Society will hold its Fourteenth Annual Postgraduate Institute at the Bellevue-Stratford Hotel in Philadelphia April 25-28, 1950. Among the subjects to be covered will be Pediatrics, Virus Diseases of the Skin, Antibiotics and Chemotherapy, Management of Inoperable Malignancy, Rehabilitation, Carcinoma of the Prostate, Problems of Adolescence, Epilepsy, Gastrointestinal Hemorrhages, Obstetrical and Gynecological Problems, Geriatrics, Fractures, and Arthritis. There will also be two special evening sessions at the hotel one consisting of a Clinical Pathological Conference and the other dealing with problems of Alcoholism.

Arrangements are being made to record the material presented in the Question and Answer Period following each lecture and a summary of this material will be made available to each paid registrant. The registration fee is $10.00 payable in advance or at the time of registration. The usual variety of high grade technical exhibits will be part of the meeting. Preliminary programs have already been mailed to all physicians in Pennsylvania, New Jersey, Delaware, Maryland, and the District of Columbia, but additional copies may be secured by writing to Gilson Colby Engel, M.D. Director; 301 South Twenty-first Street, Philadelphia, Pa.

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Streptomycin suppresses but does not kill tubercle bacilli in the human body. Hence we cannot and must not think of streptomycin as a definitive, all-sufficient treatment. It must fit into the over-all strategy of treatment, and it complicates, rather than simplifies, the task of the physician. It is necessary to know not only whether or not to use streptomycin but also when to use it, because often it can be used only once. Each time it is used, there is a possibility of altering the bacterial population so that only drug-resistant bacteria remain. If a more serious tuberculous complication develops later, recourse to streptomycin might then be useless. H. Corwin Hinshaw, M.D., Nat. Tuberc. A. Tr. 1948.

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# DELAWARE STATE MEDICAL JOURNAL

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*Official Organ of the Medical Society of Delaware*
INCORPORATED 1789

VOLUME 22
NUMBER 4

APRIL, 1950

Per Copy, 50c
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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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*Owned and Published by the Medical Society of Delaware*

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## THE EMPLOYMENT OF MASSIVE BLOOD TRANSFUSIONS*

### In the Performance of Extensive Surgical Procedures.

Robert A. Mino, M. D.,
Wilmington, Del.

With particular reference to its use in (A) complete and incomplete pelvic and perineal eviscerations, with uretero-colic implantation; (B) portacaval shunt; and (C) total thoracic esophagectomy with high intra-thoracic cervical esophago-gastrostomy.

In the past decade a great number of advances have occurred in the field of surgery. Many new operative procedures have been devised and are now being employed with a fair degree of success.

A number of factors have contributed to this extension in the surgical field. It is not the purpose of this report to elaborate on each of these factors, since these are now well known by all recognized surgeons. Whipple[10] has recently given a brief review of the factors which have contributed to the safety and success of present-day radical surgery. Numerous other recent publications have stressed the advances in anesthesiology, chemotherapy, preoperative, operative, and postoperative fluid and electrolyte therapy, plasma and blood transfusions, etc. Suffice it to say, that without these important contributions, it would be impossible to carry out many of the present-day surgical procedures.

The present communication is limited to a consideration of the importance of the use of large quantities of blood during operation as a means of extending the surgical sphere. By the use of large amounts of blood it has been possible to perform operative procedures which have formerly never been employed, and which would otherwise be impossible of accomplishment. In stressing this factor it is well recognized that massive transfusions alone are not responsible for the successful performance of these procedures, since the other factors listed above are also in operation. Yet it can be stated unreservedly that, in spite of these advances, the successful accomplishment of the procedures listed in this report would have been impossible if large quantities of blood had not been administered during the operation.

The individual case reports herein are of procedures of relatively recent origin, which have been performed with comparative rarity throughout the world. All the cases in this report have been operated upon by the author, and all have been personally followed to the present date.

### Case Reports

*A. Complete or incomplete pelvic and perineal evisceration, with or without uretero-colic implantation.*

**Case 1.** D. C. Hospital No. 83153. This 54 year old, white female was admitted to the Memorial Hospital on May 15, 1949, with recurrence from carcinoma of the cervix. In 1942 a total abdominal hysterectomy had been performed in another institution for carcinoma of the cervix. In August 1945 she was seen in the Carpenter Memorial Clinic by Dr. John F. Hynes, with recurrent carcinoma, involving the anterior vaginal wall. She was treated by irradiation through a per-vaginal cone, with subsequent complete clinical regression of the lesion. On a followup examination on May 5, 1949 recurrent tumor was noted in the anterior vaginal wall, vaginal apex, both parametria, peri-vesical and peri-rectal tissues. Biopsy report showed squamous cell carcinoma, grade III. The entire mass of recurrent tumor was movable, (not fixed to the pelvic walls). Complete examination showed no evidence of metastases other than that noted in the pelvis. X-ray examination of the chest was negative for metastases. The initial blood count showed a slight anemia, which was corrected by transfusion of 1000 c.c. of blood. The urinalysis and blood chemistry determinations were within normal limits. The BUN was 15 mg.%. I.V. pyelograms showed no abnormalities. Since the disease was recurrent and extensive, in spite of previous adequate irradiation, no therapy was available to this patient, and she was thus classified as a hopeless case.

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*From the Department of Surgery and the Carpenter Memorial Clinic, Memorial Hospital.

However, since the disease was confined to the pelvis, it was decided to extirpate all the pelvic and perineal viscera, and implant the ureters into the colon proximal to the colostomy. After a detailed explanation of the problem to the patient, she gladly accepted the proposed procedure. On May 23, 1949 operation, consisting of en-bloc complete pelvic and perineal evisceration (resection of the common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder, urethra, lower ureters; parametria; recurrent tumor; pelvic sigmoid, rectum, anus; vagina, vulva and perineum), with implantation of both ureters into the colon, proximal to the colostomy, was performed. Careful examination of the entire abdomen showed no evidence of disease, except for that which was resected. It was felt that all disease had been completely removed, and thus the patient should have a good chance of being permanently cured of an otherwise hopeless disease.

She tolerated the 10½ hour operative procedure very well, the blood pressure at the conclusion of the operation being 130/80, with a pulse rate of 112 per minute. During the operation, she received 6000 c.c. of blood, 1800 c.c. of plasma, and 3500 c.c. of 5% glucose in saline intravenously. The immediate and subsequent postoperative course was quite good.

Urinary flow from the implants began immediately after operation, and subsequently the urinary output varied between 1000-2600 c.c. daily. She was ambulatory on her sixteenth postoperative day, and her abdominal wound healed per primam. On 6-15-49 the BUN was 6 mg.%.

At the time of discharge from the hospital on 7-4-49, the large pelvic defect was only about 40% of its original size. She has been followed closely. She has resumed all of her previous duties as a housewife, and editor of a local newspaper. Her wet colostomy is well controlled by means of a modified "Rutzen Bag," which usually requires reapplication every 5-6 days. The last follow-up examination, April 4, 1950, showed no evidence of recurrent disease. The pelvic defect now consists of a small sinus about .5 cm. in diameter and 2 cm. in depth. She is entirely asymptomatic. Her mental outlook is excellent. The BUN was 17 mg.%.

**Case 2.** P. R. Hospital No. 83680. This 49 year old, white female was admitted to the Memorial Hospital on 11-17-49, with residual carcinoma of the cervix, with extension to the anterior vaginal wall, left parametria, periurethral, peri-vesical, and peri-rectal tissues. The entire massive tumor was movable. She had previously received an adequate course of external irradiation and raidum therapy, shortly after first being seen by Dr. John F. Hynes. At the time of the present admission she was in good general condition. There was no evidence of metastases in the groins or elsewhere. X-ray examination of the chest showed a shadow in the left upper lobe, which probably represented an old healed tuberculous process. The I.V. pyelogram showed an absence of the renal shadow on the left side, probably due to long standing ureteral obstruction from tumor in the left parametrium. The initial blood count, urinalysis and blood chemistry determinations were within normal limits.

On 11-30-49 operation was performed, consisting of en-bloc complete pelvic and perineal evisceration, (resection of common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder, urethra, lower ureters; uterus, adnexae, parametria; recurrent tumor; pelvic sigmoid, rectum, anus; vagina, vulva and perineum), with ligation of the left ureter, (this kidney showed no function during the entire course of the operation and had previously showed non-function by pyelograms; this non-functioning was found to be due to long standing left utereral obstruction by tumer in the left parametrium, which completely occluded the ureter), and implantation of the right ureter into the sigmoid colon proximal to the colostomy.

Exploration of the abdomen at the time of operation showed no evidence of disease other than that completely resected from the pelvis, except for the possibility of tumor in a few nodes around the celiac axis, since these nodes were slightly enlarged. Therefore, the ultimate prognosis in this case remains somewhat guarded.

The patient tolerated the 9½ hour procedure well. She received 8100 c.c. of blood, 2000 c.c. of 5% glucose in water, and 1000 c.c. of 5% glucose in saline intravenously during the operation. Urinary flow from the implant began immediately after operation, and continued well throughout the remainder of her hospital course. Since this patient was rather uncooperative, it took a great deal of persuasion to get her to the stage of ambulation, thus delaying her discharge from the hospital for over a month. She was finally discharged on 2-12-50 in an ambulatory state. The BUN, shortly before discharge, was 10 mg.%.

At a recent follow-up examination in March, 1950, she was progressing satisfactorily. The pelvic defect is now about 50% of its original size. There was no evidence of recurrent disease. Her wet colostomy is well controlled by means of a modified "Rutzen Bag."

**Case 3.** L. M. Hospital No. 85567. This 56 year old, married, white female was admitted to the Memorial Hospital on 12-12-49 with metastatic carcinoma to the vaginal apex, left parametrium, and peri-vesical tissues. The entire mass of tumor was movable. On 12-8-48 total abdominal hysterectomy and bilateral salpingo-oophorectomy had been performed in another institution for adenocarcinoma of the uterine corpus. At the time of the present admission, x-ray of the chest was negative for metastases. The blood count, urinalysis, and blood chemistry determinations were within normal limits. The I.V. pyelogram showed no abnormalities. On 12-21-49 an en-bloc incomplete pelvic and perineal evisceration, (resection of the common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder and urethra; recurrent tumor; parametria; vagina and vulva), with implantation of both ureters into the sigmoid colon by a modified Coffey I technique, was performed. The rectum was preserved. Exploration of the entire abdomen at the time of operation showed no evidence of disease other than that which was completely resected; thus this patient should have a chance of being permanently cured of her disease.

She tolerated the 10 hour procedure very well, although unexplained continuous oozing from the operative area in the pelvis, in spite of meticulous ligation of vessels, necessitated the use of huge quantities of blood. At the beginning of the operation the B.P. was 125/80, with a pulse rate of 84 per minute; while at the conclusion of the operation B.P. was 120/90, with a pulse rate of 86 per minute.

She received 11,000 c.c. of blood, 2250 c.c. of plasma, and 6000 c.c. of 5% glucose in saline during the operation. A urinary output of 1000 c.c. from the transplants occurred in the first 3 hours postoperatively, and thereafter the urinary output was excellent throughout the hospital course. Her abdominal wound healed her primam. She was ambulatory on the seventeenth postoperative day. The BUN on 1-25-50 was 8 mg.%. She was discharged from the hospital on 2-1-50. On follow-up examination in March, 1950 the patient was asymptomatic and performing light household duties. She voids every 3-4 hours rectally and has excellent sphincter control. There was no evidence of recurrent disease and the defect in the pelvis was only about 10% of its original size.

**Case 4.** H.C. Hospital No. 36647. This 59 year old, married, white female was admitted to the Memorial Hospital on 10-31-49 with recurrent adenocarcinoma of the recto-sigmoid, involving both parametria, right lower ureter, cervical stump, and soft tissues of the left lower abdominal quadrant. One year previously, an incompletely obstructing carcinoma, grade IV, of the rectosigmoid had been resected and continuity of the bowel reestablished by anastomosis of the upper sigmoid to the rectum. Many years prior to this operation a supracervical hysterectomy and right salpingo-oophorectomy had been performed. At the present admission, complete examination failed to reveal the presence of metastatic disease other than that previously mentioned. X-ray examination of the chest was negative for metastases. Barium enema revealed an incompletely obstructing lesion 10 cm. from the anus, which was confirmed by sigmoidoscopy. Cystoscopy revealed displacement of the right side of the base of the bladder, apparently by tumor. The right ureter was found to be blocked 6 cm. above the vesical orifice, apparently by tumor in the right parametrium. I.V. pyelogram showed a slight hydronephrosis on the right side. Renal function tests showed adequate kidney function. The entire mass was movable. The initial blood count, urinalysis and blood chemistry determinations were within normal limits.

On 11-4-49 operation, consisting of en-bloc resection of pelvic lymph nodes, combined abdomino-perineal resection, resection of recurrent tumor; parametria, left adnexae, right lower ureter, cervical stump, and upper half of the vaginal canal, with implantation of the right ureter into the fundus of the bladder was performed, along with resection of the left lower abdominal quadrant. Exploration of the abdomen at the time of operation showed no evidence of disease except for that which was completely resected. In spite of meticuluous ligation of blood vessels, continuous unexplained oozing of blood from the operative area in the pelvis occurred. During the 10½ hour operative procedure she received 8000 c.c. of blood, 2100 c.c. of plasma, 3000 c.c. of 5% glucose in saline, and 2000 c.c. 5% glucose in water intravenously. She tolerated the operative procedure well, the B.P. at the beginning being 130/80, with a pulse rate of 80 per minute, while at the conclusion of the operation the B.P. was 110/62, and the pulse rate was 102 per minute.

She did well postoperatively and was ambulated on the eighteenth postoperative day. She was discharged from the hospital on 12-9-49. When last seen in March, 1950, she was completely asymptomatic and performing light household duties. There was no evidence of recurrent tumor and no disturbance in urinary function. The pelvic defect consisted only of a small sinus several millimeters in diameter and about 3 cms. in depth. Her mental outlook is excellent.

**Case 5.** M. VanD. Hospital No. 79926. This 64 year old, white widow was admitted to Memorial Hospital on 9-10-48 with a massive primary melanoma of the vagina, filling practically the entire vaginal canal, involving the vaginal walls, parametria, peri-rectal and peri-vesical tissues. The entire tumor was movable. Both groins were negative, and careful examination failed to reveal metastatic disease. X-ray examination of the chest was negative for metastases. The blood count, urinalysis and blood chemistry determinations were within normal limits. The I.V. pyelogram showed complete absence of a kidney shadow on the right side (this was later found to be due to complete destruction of the kidney by an old healed tuberculous process).

On 9-20-49 operation, consisting of en-bloc complete pelvic and perineal evisceration, (resection of common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder, urethra, lower ureters; uterus, adnexa, parametria; tumor; pelvic sigmoid, rectum, anus; vagina, vulva and perineum), with ligation of the right ureter and implantation of the left ureter into the sigmoid colon proximal to the colostomy, by a modified Coffey I technique, was performed. Careful examination of the entire abdomen failed to reveal the presence of metastatic disease other than that which was completely resected. The patient tolerated the 12 hour operative procedure fairly well, the B.P. at the beginning being 115/78, while two hours following the completion of the procedure the B.P. was 140/100. She received 6300 c.c. of blood, 2000 c.c. of plasma, and 1000 c.c. of 5% glucose in saline intravenously during the course of operation. The immediate postoperative course was good.

The urinary output of 600 c.c. occurred in the first six hours, after which time the urinary output completely ceased. Failure of urinary output continued up to the fifth postoperative day. Whether this represented a lower nephron nephrosis or a block of the ureter which had occurred six hours after operation was not certain. Difficulty was encountered in attempting to maintain normal electrolyte balance. The patient began to show the ill effects of continuous retention of nitrogenous waste products, and since her general condition was deteriorating rapidly, a nephrostomy was performed on the fifth postoperative day. However, the patient failed to improve, and expired as a result of uremia on her sixth postoperative day (9-26-48). Autopsy examination revealed the presence of a small 3 x 6 mm. clot, which had formed in the postoperative period, and resulted in occlusion of the lower end of the implanted ureter. The right kidney was found to consist of only a shell containing calcified material, presumably having been destroyed by an old tuberculous process.

**Case 6.** A.S. Hospital No. 85244. This 55 year old, married, white female was admitted to the Memorial Hospital on 11-14-49 with a large squamous cell carcinoma of the cervix, with massive infiltration of both parametria, and adjacent peri-vesical and peri-rectal tissues. The entire mass was movable. She had previously been seen in April, 1949 in another institution, at which time she gave a history of post-menopausal bleeding of 2¼ years duration. She received external irradiation and radium therapy in that institution without any significant regression of the lesion. At the time of present admission careful examination failed to reveal evidence of metastatic disease, other than that noted in the pelvis. X-ray examination of the chest was negative for metastases. I. V. pyelogram showed poor kidney function on the left side. The BUN was 12 mg.%. Patient was a known hypertensive, although there had been no previous evidence of failure. B.P. on admission was 250/110.

On 11-23-49 an operation, consisting of en-bloc complete pelvic and perineal evisceration, (resection of common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder, urethra, lower ureters; uterus, adnexa, parametria; tumor; pelvic sigmoid, rectum, anus; vagina, vulva and perineum), with implantation of both ureters into the colon proximal to the colostomy by a modified Coffey I technique, was performed. In spite of her hypertension, she tolerated the 9½ hour procedure extremely well. She received 4500 c.c. of blood, 2000 c.c. of 5% glucose in saline intravenously during the course of the operation. Careful exploration of the abdomen at the time of operation failed to reveal the presence of disease, other than that which was completely resected, and thus this patient has a good chance of being permanently cured of an otherwise hopeless disease. The urinary output began immediately after operation, and thereafter the output varied from 1000-2600 c.c. daily. Ambulation was begun on 12-14-49. Her postoperative course was quite good. Her wound healed her primam. On 1-9-50 the BUN was 14 mg.%.

She was discharged from the hospital on 1-14-50, at which time she was completely asymptomatic. In March, 1950, on follow-up examination, she was progressing satisfactorily. There was no evidence of recurrent disease. The wet colostomy was being well managed by a modified "Rutzen Bag." The pelvic defect was approximately 25% of its original size. Her mental outlook is excellent.

**Case 7.** F.K. Hospital No. 46622. This 55 year old, white male was admitted to the Memorial Hospital on 11-5-48 with numerous perirectal sinus tracts and multiple fistulae in ano, of years duration, and with incomplete obstruction of the rectum. Examination revealed the patient to be in fairly good condition. There were numerous fistuluous tracts and sinuses, and extensive induration in the perirectal area extending out to the buttocks. There was an obstructing mass in the rectum with adjacent mass filling practically the entire pelvis. The entire mass was movable, except for fixation to the lower end of the sacrum, coccyx, and prostate gland. Biopsy of one of the sinus tracts revealed adenocarcinoma, grade III, which represented extension down the tract from an adenocarcinoma of the rectum which had infiltrated extensively into the perineum. The groins were negative for metastases, and examination failed to reveal evidence of disease other than that previously mentioned. X-ray of the chest was negative for metastases. X-ray of the sacrum was negative for invasion by tumor, and apparently the tumor was fixed only to the periosteum overlying the lower end of the sacrum.

On 11-12-48 incomplete pelvic and perineal evisceration was performed by an en-bloc combined abdomino-perineal resection; resection of prostate; pelvic lymph nodes, lower sacrum, coccyx; wide excision of perineum and adjacent gluteal muscles; and a segment of the urethra, which was re-anastomosed end to end; cystotomy was performed in order to carefully delineate the extent of the tumor and preserve this structure from injury. The bladder was closed prior to closure of the abdomen. Careful examination of the abdomen during operation failed to reveal evidence of disease except for that which was resected. The patient tolerated the 8 hour operative procedure very well, receiving 3500 c.c. of blood, 300 c.c. of plasma, and 3000 c.c. of 5% glucose in water intravenously during the course of the operation. The postoperative course was quite good. The colostomy functioned well, and the abdominal wound healed per primam. He was discharged from the hospital 12-17-48, and shortly afterwards returned to work.

On a follow-up examination 4-1-49 a metastatic lymph node was noted in the left groin and on 4-4-49, a left radical groin dissection was performed. However, at the time of performance of the groin dissection tumor was found fixed to the pubic bone. Postoperative course was essentially uneventful, and he was discharged on 4-26-49. He did well for several months, but finally expired on 8-3-49 of metastatic disease.

**Case 8.** F.L. Hospital No. 79739. This 44 year old, married, white female was admitted to the Memorial Hospital on 2-15-49 with recurrent carcinoma of the cervical stump and bilateral parametrial involvement, with involvement of the lower end of the right and adjacent portion of the right side of the bladder. In 1944 a supracervical hysterectomy had been performed in another institution. In the summer of 1948 carcinoma of the cervical stump, (squamous cell carcinoma, grade III), was discovered, and she received an adequate course of irradiation and radium therapy at the Carpenter Memorial Clinic. At the time of present admission the entire tumor mass was movable. Her general condition was excellent and there was no evidence of disease other than that noted in the pelvis. Examination of the chest by x-ray was negative for metastases. A complete G.U. investigation revealed slight hydronephrosis on the right side and distortion of the right side of the base of the bladder by tumor.

On 2-23-49 an en-bloc resection of common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; right side of the bladder, including its base, along with the right lower ureter; recurrent tumor; parametria, cervical stump, upper vagina; with implantation of the right ureter into the sigmoid colon by a modified Coffey I technique, was performed. The patient tolerated the 9 hour operative procedure very well, the B.P. at the beginning of the operation being 130/90, with a pulse rate of 70 per minute, and at the conclusion, the B.P. was 130/90, with a pulse rate of 90 per minute. She received 3500 c.c. of blood, 2000 c.c. of 5% glucose in saline intravenously during the operation. Exploration of the abdomen failed to reveal evidence of disease other than that which was resected, and thus the patient should have a good chance of being permanently cured of her otherwise hopeless disease. The postoperative course was quite good. Urinary flow began immediately after operation, and continued from the transplant in a satisfactory manner.

Since the patient had received heavy irradiation preoperatively, and since a great portion of the blood supply of the bladder had been sacrificed during the operation, a vesicovaginal fistula appeared on the twenty-first postoperative day. Shortly afterwards, the entire necrotic bladder extruded itself through the urethra.

On 4-1-49 the left ureter was implanted in the sigmoid colon by a modified Coffey I technique. Postoperative course was quite smooth, and the urinary output per rectum continued in a satisfactory manner. She was discharged from the hospital completely asymptomatic on 4-15-49.

On a recent follow-up examination, thirteen months postoperatively, she was found to be completely well and leading a normal life. There was no evidence of recurrent disease. She usually voids rectally about every five hours during the day, and seldom has to get up at night. There is excellent sphincter control. The BUN on 12-6-49 was 13 mg.%.

**Case 9.** B.A. Hospital No. 80532. This 46 year old, colored female was admitted to the Memorial Hospital on 4-20-49, with repeated episodes of severe vaginal bleeding due to a recurrent carcinoma of the cervix.On 12-27-48 she was first seen in the Carpenter Memorial Clinic with a bulky squamous cell carcinoma of the cervix, which had extended to involve both parametria. She received a full course of external irradiation, followed by intrauterine radium. Clinical regression of the lesion occurred. On a follow-up examination 4-6-49 recurrent carcinoma was noted in the cervix and there was massive involvement of both parametria, with extension to the perivesical tissues and adjacent bladder. There was apparently no peri-rectal or rectal invasion. The entire tumor mass was movable. Examination of the chest was negative for metastases. I.V. pyelogram, retrograde pyelograms showed no abnormalities. The blood chemistry determinations were within normal limits. The anemia was corrected by multiple transfusions.

On 5-3-49 an en-bloc incomplete pelvic and perineal evisceration, (common iliac, external iliac, obturator and hypogastric lymph nodes; internal iliac vessels and branches; bladder, urethra; uterus, adnexae, parametria; tumor; vagina and vulva), with implantation of both ureters into the sigmoid colon, was performed. Exploration of the abdomen at the time of operation showed no evidence of disease other than that which was resected, thus this patient has a good chance of being cured of her disease. The rectum was preserved, since it was not involved by tumor. She tolerated the 11½ hour operative procedure very well; the B.P. at the conclusion being 130/90, with a pulse rate of 90 per minute. She received 4100 c.c. of blood, 1000 c.c. of plasma, 2000 c.c. of 5% glucose in saline and 1000 c.c. 5% glucose in water intravenously, during the course of the operation.

The general postoperative course was quite good. Urinary flow from the implants began immediately after operation and a daily output of 1200-1500 c.c. per rectum was recorded. She was ambulatory on the seventh postoperative day. Seventeen days postoperatively a small fistula occurred on the anterior rectal wall, thus somewhat complicating the postoperative course. Since she lived a great distance from the hospital and had no one to offer her care she was necessarily delayed in the hospital for several months, in order to allow the large pelvic defect and fistula to contract. She was discharged on 8-20-49, at which time the pelvic defect was only about 25% of its original size and the fistula could be fairly well controlled by daily change of a small amount of packing. At the time of discharge BUN was 7 mg.%. She was entirely ambulatory.

On follow-up examination on 12-14-49 there was no evidence of recurrent disease. The defect in the pelvis and perineum consisted of a tract ¾'' by 2''. The small fistula was still present and well controlled by daily change of packing. She was asymptomatic and performing light household duties. The BUN was 19 mg.%. A letter received in March, 1950, stated that the patient continued to progress in a satisfactory manner.

**Case 10.** H.B. Hospital No. 83212. This 63 year old, white, married female was admitted to the Memorial Hospital on 12-15-49. She was first seen in the Carpenter Memorial Clinic by Dr. John F. Hynes on 4-12-49, with a carcinoma of the cervix involving the entire circumference of the adjacent vagina. She received a full course of external irradiation, followed by intrauterine radium. Complete clinical regression of the lesion occurred. Recurrence was noted on the anterior vaginal wall on 10-4-49, and she received irradiation through a per-vaginal cone, following which there was again complete regression of the lesion. On 11-1-49, recurrent carcinoma of the cervix and a portion of the adjacent vaginal wall was again noted. Biopsy showed squamous cell carcinoma. She was otherwise free of metastatic disease. X-ray examination of the chest showed no evidence of metastases.

Following admission a moderately, severe, previously unrecognized diabetes was found and controlled by diet and insulin. EKG showed left ventricular preponderance and anterior myocardial damage, most likely on the basis of an old anterior infarct. However, there was no definite evidence of failure. Since her disease was recurrent and involved the circumference of the vaginal canal when first noted, it was felt that complete evisceration was necessary in order to be sure that all disease would be removed. Aside from the diabetes her blood chemistry and laboratory determinations were essentially within normal limits.

On 12-28-49 a complete pelvic and perineal evisceration (common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches; bladder, urethra; uterus, adnexae, parametria; pelvic sigmoid, rectum; anus, vagina; perineum and vulva), with implantation of both ureters into the colon proximal to the colostomy by a modified Coffey I technique, was performed. Exploration of the abdomen at the time of operation, revealed absence of disease other than that completely resected, thus it was felt that this patient had an excellent chance of being permanently cured. She tolerated the 9½ hour operative procedure extremely well, the B. P. at the beginning of the procedure being 110/70, with a pulse rate of 70 per minute, while at the conclusion the B.P. was 110/60, with a pulse rate of 80 per minute. She received 5500 c.c. of blood, 2000 c.c. of 5% glucose in saline intravenously during the course of the operation.

However, it was noted during the operation that no flow of urine occurred from the divided ureters, and at the conclusion of the operation large wheals were noted on the skin. This probably indicated an unrecognized transfusion reaction during anesthesia, with the result that a lower nephron nephrosis had occurred. Although no urinary flow appeared until the seventh postoperative day, her general condition remained good. The urinary output rapidly increased, and attained a satisfactory level. On the fifteenth postoperative day (1-12-50), while the patient was sitting up eating her evening meal, she suddenly expired. Postmortem examination revealed a massive pulmonary embolism. No evidence of residual carcinoma was found in the body.

**Case 11.** A.S. Hospital No. 37327. This 46 year old, colored female was admitted to the Memorial Hospital on 9-14-48 with a carcinosarcoma, (probable radiation cancer) of the uterus, involving parametria, bladder and vagina, with an accompanying vesico-vaginal fistula. This patient had first been seen in Carpenter Memorial Clinic by Dr. John F. Hynes in 1935, with an anaplastic carcinoma of the cervix. Following treatment by irradiation she refused to return for follow-up examinations until 1946, when she was admitted to the hospital with a vesico-vaginal fistula and mild uremia. There was no evidence of recurrent disease at this time. The fistula was repaired but recurred in fifteen days following surgery, and the patient was discharged. She again failed to return for follow-up examinations until just before the present admission. X-ray examination of the chest was negative for metastases. BUN was slightly elevated. Previous episodes of urinary tract infection had resulted in impairment of renal function. Thus it was decided to first implant the ureters into a divided segment of the colon, in order to allow for improvement in renal function. Attempt at I.V. pyelograms were unsuccessful, and it was obviously impossible to do retrograde pyelograms, due to the presence of the fistula. On 10-15-48 both ureters were implanted into the distal sigmoid colon and the proximal colon was brought out as colostomy.

On 11-15-48 an en-bloc resection of the pelvic lymph nodes; uterus; parametria, adnexae; bladder; urethra; and vagina was performed. Unfortunately, during the last stages of completion of the resection it was noted that there was slight fixation of tumor to the lateral pelvic wall, thus obviously indicating that a cure would not be obtained. However, it was felt that palliation would be offered. She tolerated the 7½ hour operative procedure well, receiving 4000 c.c. of blood, 1200 c.c. of plasma, 3000 c.c. 5% glucose in water, and 1000 c.c. of 5% glucose in saline intravenously during the course of the operation. The patient did well in the immediate postoperative period. The output from the implants was good. On the thirteenth postoperative day a small fistula of the terminal ileum occurred. The fistula resulted in no significant ill effects on the general status of the patient, and the electrolyte balance could be well controlled by the addition of 30 grams of sodium bicarbonate, daily, in divided doses. She was quite insistent on going home, and since no attempt for the immediate repair of the fistula was contemplated, she was allowed to leave the hospital on 12-2-48. The BUN several weeks prior to discharge, was 22 mg.%. The patient suddenly died at home, of unexplained causes, about ten days after discharge from the hospital.

**Case 12.** E. G. Hospital No. 69210. This

45-year-old, colored female was admitted to the Memorial Hospital on 7-25-49. She was first seen in the Carpenter Memorial Clinic by Dr. John F. Hynes on 10-27-48, with a squamous cell carcinoma of the cervical stump (grade IV). She was treated by an adequate course of external irradiation and radium therapy, with complete regression of the lesion. In May, 1949 recurrent carcinoma involving the cervical stump, parametria, perivesical and peri-rectal tissues was noted. The entire lesion was movable. Complete examination failed to reveal the evidence of metastases elsewhere. X-ray examination of the chest showed no metastases. Pyelograms showed no abnormality. The kidney function was good. The blood chemistry determinations were within normal limits. The anemia which was present was corrected by 1000 c. c. of blood preoperatively.

On 8-10-49, complete en-bloc pelvic and perineal evisceration, (common iliac, external iliac, hypogastric and obturator lymph nodes; internal iliac vessels and branches: pelvic sigmoid; rectum; anus; bladder; cervical stump; tumor; parametria; vagina and perineum), with implantation of both ureters into the colon proximal to the colostomy, was performed. Complete exploration of the abdomen at the time of operation showed no evidence of disease except that which was resected; thus she had an excellent chance of being permanently cured. She tolerated the 12 hour operative procedure well, receiving 5000 c. c. of blood, 1000 c. c. of 5% glucose in saline, and 2000 c. c. of 5% glucose in water intravenously. There was immediate urinary flow from the transplanted ureters, and the urinary flow continued in a satisfactory manner throughout the postoperative course. She was ambulatory on the seventh postoperative day. On the thirty-third postoperative day (9-12-49) an ileo-perineal fistula occurred.

On 10-14-49 complete exclusion of the fistula was performed by transection and closure of the ends of the fistuluous segment, and by side-to-side ileo-cecostomy. She did fairly well, and was discharged from the hospital 11-26-49. The BUN shortly before discharge (11-21-49) was 13 mg. %.

She was again admitted to the hospital on 12-28-49 in a state of severe starvation, showing severe malnutrition (weight 48 lbs.), severe anemia, and de-hydration. It was most shocking to see this patient return in such a state, and apparently this situation was the result of neglect and inability to have someone provide for her at home. In retrospect, this situation could have been prevented if the patient had been discharged to an institution where she could have at least received proper nutrition. Soon after admission the patient was transfused, and an attempt made to correct the marked malnutrition by parenteral alimentation and nasal tube feeding. However, the patient was apparently in an irreversible stage of starvation and she expired 1-1-50. Postmortem examination revealed no evidence of residual tumor in the body, and showed merely severe wasting of the viscera, as a result of inanition.

*B. Portacaval shunt for portal hypertension, secondary to severe sarcoidosis of the liver.*

**Case 13.** E. C. Hospital No. 62286. This 26-year-old, colored, married female was admitted to the Memorial Hospital on 11-24-47, with marked ascites producing severe dyspnea, with generalized Boeck's sarcoidosis. At the time of admission, the liver and spleen were tremendously enlarged. Since first discovery of her disease the process had remained somewhat stationary except for the increased involvement in the spleen and liver. The liver involvement had produced enough portal hypertension to result in ascites. The resultant symptoms were such as to make an invalid out of her. After some deliberation it was decided to resect the spleen and lower the venous pressure in the portal system by means of a shunting operation.

On 12-11-47 splenectomy and portacaval shunt, by means of an end-to-side splenorenal venous anastomosis, with preservation of the kidney, was performed.⁽⁵⁾ ⁽⁶⁾ The patient tolerated the 8 hour procedure fairly well, receiving 5500 c. c. of blood and 1000 c. c. of 5% glucose in saline intravenously, during the course of the operation. The postoperative course was complicated by a number of distressing developments. However, she was discharged from the hospital on 3-20-48. She was completely relieved of the dyspnea and ascites, and the improvement of general well-being was marked. The patient was able to perform light household duties, and at one time became pregnant, for the first time in her life, but aborted spontaneously early in her pregnancy. She was again admitted to the hospital in December, 1949 with a short history of dyspnea and occasional vomiting. There was evidence of renewed activity of her disease, particularly in the lungs, and she suddeny died on 12-11-49, almost two years following her operation. Postmortem examination revealed marked involvement of lymph nodes throughout the body, lungs, liver and other viscera. In spite of death from exacerbation of her disease, there is no doubt that the excellent palliation that she received justified the operative procedure. There was no recurrence of ascites following the operation.

*C. Total thoracic esophagectomy with intra-thoracic cervical esophagogastrostomy, for carcinoma involving or extending to the superior mediastinal segment of the esophagus.*

**Case 14.** C. M. Hospital No. 49738. This 70-year-old, white male was admitted to the Memorial Hospital on 4-27-48 with an incompletely obstructing carcinoma of the upper thoracic esophagus. His general condition was fairly good. Exarticulation of the left half of the mandible had been performed by Dr. John F. Hynes on 9-26-39 for squamous cell carcinoma of the gum, involving the bone. The patient had apparently been cured of this lesion, since there was no evidence of recurrence. At the time of the present admission barium swallow showed an incompletely obstructing lesion of the upper esophagus, and by esophagoscopy the lesion was encountered 20 cm. from the upper alveolar arch. Biopsy revealed a squamous cell carcinoma, grade IV, of the esophagus. The EKG was essentially normal. The chest x-ray showed no evidence of pulmonary metastases. The blood chemistry determinations were within normal limits. The presenting anemia was corrected by 1500 c. c. of blood preoperatively.

On 5-6-48, a bilateral prophylactic superficial femoral vein ligation was done.

On 5-13-48 a trans-pleural approach, through the bed of the resected sixth rib, was employed to enter the left pleural cavity. The carcinoma of the esophagus was found to begin 4 cm. above the superior margin of the aortic arch, and extended underneath and below the arch, (longitudinal extent of the tumor was 10 cm.). The tumor was found to be resectable. By mobilization of the aortic arch, it was possible to free the entire esophagus, after which the diaphragm was incised and the stomach mobilized, so that it could easily be brought up to the apex of the pleural cavity. The entire thoracic esophagus was resected. The remaining 4 cm. of the cervical esophagus was gently mobilized and held downward by traction sutures, after which the stomach was anastomosed to the cervical esophagus.

The point of anastomosis lay about 2 cm. above the jugular notch. The patient tolerated the 10½ hour operative procedure extremely well. Quinidine lactate had been given preoperatively, and during the course of the operation to prevent possible cardiac arrythmias.* The pulse was regular throughout the operation. The B. P. at the conclusion of the operation was 124/90, the pulse rate being 86 per minute. He received 3750 c. c. of blood, 3000 c. c. of 5% glucose in water, and 1000 c. c. 5% glucose in saline intravenously during the operation.

He did very well postoperatively, and was ambulatory several days after operation. He was eating a solid diet by his tenth postoperative day, without discomfort. On the eighteenth postoperative day, shortly before contemplated discharge from the hospital, he suddenly vomited a large amount of blood, which he promptly aspirated, resulting in immediate asphyxiation. The cause of this unusual complication is not known, since postmortem examination was not permitted.

**Case 15.** A. H. Hospital No. 82875. This 82-year-old, white, widowed female was admitted to the Memorial Hospital on 4-26-49 with a history of progressive dysphagia, beginning in December, 1948. She had lost approximately 25 lbs. in weight, and at the time of admission, could ingest only liquids. There was moderate anemia, which was corrected by several transfusions of blood. Barium swallow showed a lesion of the upper thoracic esophagus, which was confirmed by esophagoscopy. X-ray examination of the chest was negative for metastases. The patient showed a moderate degree of arteriosclerosis, and there was some impairment in renal function. However, it was felt that the patient would be able to withstand a resection of the esophagus.

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*Under the supervision of Dr. A. Henry Clagett, Jr., Consultant Cardiologist, Memorial Hospital.

On 5-2-49 a bilateral prophylactic superficial femoral vein ligation was done.

On 5-10-49 the chest was entered through the bed of the resected sixth rib, and the incision continued across the costal margin into the abdomen to convert it into a combined thoraco-abdominal incision. A carcinoma of the esophagus, which extended 3-4 cm. above the superior margin of the aortic arch, underneath and below the arch for 5 cm., was found The lesion was considered resectable. After mobilizing the aortic arch, the entire esophagus and stomach were mobilized, so that the latter could be easily brought into the apex of the left pleural cavity. The entire thoracic esophagus was resected. The proximal 4 cm. of cervical esophagus was held downward with traction sutures, and a cervical esophagogastrostomy was performed.

The patient tolerated the 11 hour operative procedure extremely well. She had previously been placed on quinidine lactate to prevent the development of cardiac arrythmias. The B. P. at the beginning of the operation was 150/80, with a pulse rate of 90 per minute; and at the conclusion of the operation the B. P. was 140/100, with a regular pulse of 90 per minute. During the operative procedure, she received 3350 c. c. of blood, 1000 c. c. of 5% glucose in saline and 1000 c. c. of 5% glucose in water intravenously.

The immediate postoperative course was satisfactory. Barium swallow on the seventh postoperative day showed that the stomach failed to empty at the pylorus, presumably due to pyloro-spasm occurring as a result of the necessary division of both vagi nerves, during the course of the operation. Maintenance of adequate nutrition and electrolyte balance by intravenous route was apparently not completely satisfactory. On the tenth postoperative day the abdomen and lower chest were re-explored, and no mechanical obstruction of the pylorus was found; thus confirming the inability of the stomach to empty due to pyloro-spasm. A Witzel jejunostomy was performed. She tolerated the procedure fairly well. However, the long continued and taxing postoperative course began to show its effects on the patient, and evidence of mild congestive failure appeared.

On the fifth postoperative day (5-26-49) at a time when the patient showed signs of gradual improvement, she suddenly expired. Postmortem examination revealed the anastomosis between the upper 4 cm. of cervical esophagus and stomach to be completely healed and presenting an adequate stoma. No obstruction to the outlet of the stomach was demonstrated. Death was presumably due to degenerative diseases of the heart and kidneys.

**Case 16.** O. K. Hospital No. 85353. This 65 year old, white female was admitted to the Memorial Hospital on 11-25-49 with an incompletely obstructing carcinoma of the upper thoracic esophagus. She was somewhat anemic, dehydrated, and had lost an unknown amount of weight prior to admission. She could swallow only liquids, and was quite resentful of her marked dysphagia. On the day of admission she had severe chest pain, which was proved to be a myocardial infarction. Barium swallow showed a high esophageal lesion, producing incomplete obstruction. Esophagoscopy confirmed the presence of a lesion beginning 20 cm. from the upper alveolar arch, and biopsy showed squamous cell carcinoma. She was treated by parenteral alimentation, high protein liquids by mouth, and the existing anemia was corrected by multiple blood transfusions.

On 12-5-49, a bilateral prophylactic superficial femoral vein ligation was carried out.

The patient's dysphagia gradually increased. She was quite insistent on being operated upon for relief of symptoms, even though she knew she presented an extremely poor risk. In view of the increased symptoms and the known behavior of the disease, the medical consultant agreed that she should undergo operation, although he fully realized that her chance of survival, following the recent myocardial infarction, was small.

On 1-11-50, through a combined thoraco-abdominal approach, the esophagus was exposed. Beginning at a point 2 cm. below where the cervical esophagus entered the chest, a bulky carcinoma of the esophagus was found, which involved the entire thoracic esophagus. After incising the diaphragm, extension of the tumor into the cardia of the stomach was noted. There were several nodes in the region of the mediastinum and celiac axis. Realizing it was impossible to remove all the disease, it was decided to resect the entire esophagus in order to obtain palliation from the dysphagia. After mobilizing the aortic arch, the entire thoracic esophagus and upper stomach were resected. The remainder of the stomach was converted into a tube-like structure, which could readily be brought up to the apex of the pleural cavity and anastomosed to the cervical esophagus without tension. She tolerated the 10½ hour operative procedure very well. The B. P. at the conclusion of the operation was 130/100, with a regular pulse of 84 per minute. During the course of the operation she received quinidine lactate to prevent the occurrence of cardiac arythmias. She received 4000 c. c. of blood and 2000 c. c. of 5% glucose in water, intravenously, to which quinidine lactate had been added, during the course of the operation.

The first postoperative day the patient showed no more ill effects than those following a routine appendectomy. However, on the second postoperative day signs of congestive failure appeared, and in spite of treatment the patient expired on 1-15-50. Postmortem examination showed degenerative disease of the heart and vessels. The anastomosis of the remaining 3.5 cm. of the cervical esophagus to the stomach was found to be intact, patent and healing well. It may be noted that the resected specimen in this case was most unusual, in that carcinoma had involved practically the entire thoracic esophagus, extending downward to involve the upper fundus and cardia of the stomach.

### Discussion

Complete pelvic and perineal evisceration with ureteral-colic implantation represents a new operative procedure, which has been devised for the extirpation of advanced and usually hopeless carcinoma, confined to the pelvis. The necessity for this operation first came to the attention of the author in September, 1948, when Case 5 presented herself with an extensive primary melanoma of the vagina. Obviously, the lesion could not be cured by radiation, since this lesion is relatively radio-resistant. In considering the anatomical extent of the tumor it seemed apparent that the only way in which the disease could be completely extirpated was by the removal of all the pelvic and perineal structures, followed by the implantation of the ureters into the colon proximal to the colostomy. Whether an individual could tolerate such a formidable procedure was a matter of immediate speculation within the author's mind. However, after careful consideration of the problem it was decided that the procedure could be performed, provided huge quantities of blood were administered during the course of the operation. The problem was discussed with the patient's family, and they decided that they would be willing to accept the proposed procedure, rather than have the patient die without an attempt being made to cure the disease. Accordingly, a complete pelvic and perineal evisceration, with implantation of the left ureter into the colon proximal to the colostomy was performed. It may be noted that the patient tolerated the operative procedure very well, and strengthened the author's conviction that the procedure was practical and could be undertaken with a reasonable risk. The unfortunate outcome in this individual was the result of a rather rare complication—blockage of the ureter by a small clot during the immediate postoperative period. Had this not occurred it is reasonable to assume she would have left the hospital alive.

The employment of this operation for primary melanoma of the vagina will undoubtedly occur with extreme rarity in the future. Only 18 previously reported authentic cases of this disease have been recorded in literature to date. The 18th case was a 26 year old, white female, who was subjected to a radical extirpation of her disease by the author[7] in December, 1946. This patient is free of disease and leading a normal existence at the time of this publication.

The demonstration that an individual could tolerate this formidable procedure so well immediately brought to mind the use of this operation for the more frequently seen advanced cervical and uterine carcinoma, and for similar carcinoma which recurs following previous irradiation. Thus the majority of the subsequent eviscerations contained in this report were employed for recurrent and otherwise hopeless pelvic carcinoma. The results to date have been encouraging. Further support in the defense of this operation came to the attention of the author shortly after the performance of Case 5, when it was discovered that Brunschwig[2] had recently reported on a similar operation for the treatment of hopelessly advanced pelvic carcinoma. He reported on 22 patients whom he had subjected to extirpation, with an immediate operative mortality of 23%. His longest postoperative survival was a 47 year old female who was living and apparently free of disease seven months after operation. Apparently no other reports of this operation have been recorded in literature to date. This procedure can also be extended and employed for extensive carcinomas of the prostate, bladder, or lower sigmoid, rectum and anus, provided the disease is confined to the pelvis at the time the patient is seen. In a few patients resection may even be advisable in the presence of limited distal metastases for palliation only. One must keep in mind that all of the patients subjected to evisceration in this report were previously classified as hopeless cases. Even if the number of resultant cures from this procedure should eventually prove to be small the patient should be given the opportunity of having the disease removed, since some of these patients will undoubtedly be cured.

A brief review of the 12 eviscerations reveals certain significant findings. As previously mentioned, one case died on the sixth postoperative day, of ureteral obstruction (Case 5). It will be recalled this patient had only one ureter transplanted, since the other kidney had been completely destroyed by an old tuberculous process. Had the diagnosis of mechanical ureteral obstruction been made with certainty, an earlier nephrostomy would have been performed, with a greater possibility of saving her life.

Case 10 died on the fifteenth postoperative day of a massive pulmonary embolism. At the time of her death she was in excellent condition and represented one of the cases in which it seemed reasonable to hope she might have been permanently cured of her disease had she survived. It was well appreciated that death from pulmonary embolism might occur in any of these cases. However, following this type of procedure, it is impossible to place the patient on anti-coagulant therapy for fear of severe bleeding from the large denuded surfaces, and likewise it is inadvisable to perform prophylactic ligation of the superficial femoral veins, since the major portion of the collateral venous channels in the pelvis are resected during the course of the operation. Thus, two cases out of twelve, or 16 2/3%, represents the operative mortality. This is indeed an insignificant mortality rate, when one considers the extent of the operation, and the fact that all cases would have expired soon from hopeless carcinoma. It may also be noted that no patient was denied resection on the basis of age or the presence of other complicating diseases.

Case 7 died nine months postoperatively from metastatic disease. However, it was realized at the time of operation that the extensiveness of the disease would make his chance of being cured rather remote. Yet he received definite palliation from the operation.

Case 12 represents a patient who had a good chance of permanent cure of her disease and yet expired as a result of severe inanition due to inability to obtain proper care at home. Had her circumstances been different the outcome might have been more favorable.

Case 11 had a rather sudden, unexpected death at home, from unknown causes, shortly after discharge from the hospital. This patient, however, represented the only case in which a definite amount of residual disease was found to be not completely resectable during the course of operation.

In all, five of the twelve eviscerations, (41 2/3%) have died, two being postoperative deaths, and three dying later. Seven, (58 1/3%) of the patients are living and apparently free of disease to date. The longest postoperative survival is thirteen months (Case 8). Most of these patients are asymptomatic and performing household duties, and in one case part-time newspaper work. They all have an excellent mental outlook. Each volunteers the information that she was glad the procedure had been performed, in spite of the slight inconvenience resulting from the anatomical changes produced by the operation.

No detailed discussion will be given of Case 13, since this patient was previously reported by the author.[5 6]

The operation of portacaval shunt for the correction of portal hypertension has been performed to date with relative rarity. In this patient operation was followed by excellent relief of symptoms which had incapacitated the patient, reducing her to a state of invalidism. For the remaining two years of her life following operation she was quite comfortable and that, in itself, is ample justification for having performed the procedure. It was well realized before operation that this patient might eventually expire of generalized exacerbation of her disease process, yet the operation was deemed advisable in order to relieve her of her incapacitating symptoms. The importance of the use of liberal amounts of blood in allowing the successful performance of this procedure cannot be overemphasized.

The accomplishment of resections for carcinomas of the esophagus indicate another achievement which is of recent origin. Adams and Phemister[1] reported the first successful resection of the lower esophagus with esophago-gastrostomy for a carcinoma of the lower thoracic esophagus in 1938. Subsequently numerous other attempts were made at resection of the esophagus; however, only until recently has carcinoma of the superior segment of the thoracic esophagus been attacked surgically.

At the time Case 14 was subjected to operation no report had yet appeared in the literature dealing with resection of the entire thoracic esophagus for carcinoma and the re-establishment of continuity of the G. I. tract by esophago-gastrostomy. In Case 14 it was found possible to resect the entire thoracic esophagus for carcinoma, and yet perform anastomosis of the remaining cervical esophagus to the mobilized stomach by trans-thoracic route. In this individual the uppermost limit of the lesion was found to be 4 cm. above the superior margin of the aortic arch. This 70 year old male tolerated the long operative procedure extremely well, and at the time of his sudden death on the seventeenth postoperative day, he was ambulatory, asymptomatic and eating solid food. A death from asphyxiation following aspiration of vomited blood is an extremely rare and unexpected complication, and the source of bleeding was only conjectural, since postmortem examination was not permitted.

Case 15 represented an obviously poor risk, since she was 82 years of age and showed signs of degenerative diseases of the heart, kidneys and blood vessels. Her lesion extended 3-4 cm. above the superior margin of the aortic arch. The entire thoracic esophagus was resected and the cervical esophagus anastomosed to the transplanted stomach through a thoraco-abdominal approach. This patient also tolerated the long operation extremely well. It might be noted, parenthetically that both of these patients received quinidine lactate[11] during the immediate preoperative, operative, and postoperative period, under the supervision of Dr. A. Henry Clagett, Jr., in order to prevent the possibility of development of cardiac arrythmias. Both of these patients exhibited no changes in their cardiac rhythm. This patient also showed a rather unusual complication in her postoperative period, namely, inability of the outlet of the stomach to empty due to pyloro-spasm, which was the result of the necessary division of both vagi nerves, during the course of extirpation of the esophagus. The long protracted postoperated course apparently placed too great a burden on her already impaired cardiovascular-renal system and she expired fifteen days after operation. Had the stomach emptied sooner in the postoperative period it is reasonable to assume this patient might have survived.

Case 16 represented an extremely poor operative risk, since she had a myocardial infarction six weeks prior to operation. The patient, in full possession of the facts, insisted upon operation and it was decided to accept the risk. This decision was further bolstered by the knowledge that the disease, untreated, would be unquestionably fatal within a short time. She tolerated total extirpation of the esophagus extremely well. Her death was not unexpected in view of her previous poor cardiac status. The disease in this patient represents an unusual entity, since it involved practically the entire thoracic esophagus, and extended downward to involve the stomach. It will be noted that successful anastomosis of the stomach to the cervical esophagus was possible, even though a segment of the upper stomach was resected at the time of operation.

Very few reports of resections of the entire thoracic esophagus for carcinoma of the upper thoracic esophagus have appeared in the literature to date. In June, 1948, DeBakey and Oschner[3] reported resection of a carcinoma of the upper esophagus through a thoraco-abdominal approach, in a 77 year old colored male. The continuity of the alimentary tract was re-established by a high intrathoracic esophago-gastrostomy The lesion in this instance extended up to the level of the superior surface of the aortic arch. The patient did well, and was alive and apparently continuing to do well ten months postoperatively.

In July, 1948, Garlock [4] reported resection of a carcinoma of the esophagus extending one inch above the superior surface of the aortic arch, in a 46 year old, white female, through a combined left neck and thoracic approach. The entire thoracic esophagus was resected and the continuity of the alimentary tract re-established by anastomosis of the cervical esophagus to the stomach in the neck. The patient died 5 hours postoperatively, presumably of a vago-vagal reflex.

In December, 1948, Sweet[9] reported the resection of a carcinoma of the superior mediastinal segment of the esophagus in a 55 year old male, through a trans-thoracic approach. After mobilization of the stomach a portion of the first rib and clavicle were resected, and the stomach anastomosed to the cervical esophagus through a separate neck incision. The patient did well and was apparently living and presumably free of disease at the time of his report.

In June, 1949, Schefts and Fischer[8] reported resection of the entire esophagus and a portion of the adjacent pharynx, with anastomosis of the transplanted stomach to the pharynx, through a combined neck and transthoracic approach, in a 66 year old male with a carcinoma of the cervical esophagus, extending to the upper thoracic esophagus. The patent expired on the sixth postoperative day of a pulmonary embolism, and at postmortem examination the anastomosis was found to be intact.

The feasibility of resecting the esophagus for these lesions which were formerly considered not operable is well demonstrated by the above reports. Fortunately, carcinoma involving the superior thoracic segment of the esophagus is not common. However, since the operation for these lesions is now well established, more patients will be subjected to operation in the future and an increasing number of these patients will survive as experience is gained. The importance of the use of liberal quantities of blood in the successful performance of these long and difficult cases is obvious.

## Conclusion

The entire series of cases herein reported serves to demonstrate what has been accomplished in the extension of the surgical sphere. This has been made possible only by the recent advances which have previously been mentioned, and particularly by the employment of massive quantities of blood during the operative procedures. During the performance of these long operations, particularly the pelvic eviscerations, considerable effort is expended to insure as good hemostasis as possible. However, at times, blood is lost rather rapidly by oozing from large denuded surfaces. At other times, rapid bleeding from temporarily inaccessible vessels necessitates the infusion under pressure, of 500-1000 c. c. of blood in a period of 5-10 minutes. Thus, it is obvious that large amounts of blood must be crossmatched and ready for instant use. The practice of continuously administering blood with the crossmatching of each pint, after half of the volume of the previous pint has been transfused, cannot be employed in these cases, since the necessity for infusion of blood rapidly makes it imperative that the blood be immediately on hand. The possibility of transfusion reaction occurring, when these large amounts of blood are administered, is more of an academic speculation than a real occurrence. No significant reactions have occurred in this entire series except for the possibility of a reaction in Case 10. However, by careful attention to the postoperative electrolyte balance, this patient did extremely well, and recovered satisfactory urinary function until she suddenly died of massive pulmonary embolism.

In the employment of such large quantities of blood many problems immediately arise. The first consideration is obtaining the donors. As a rule donors can be obtained, provided the physician takes the necessary time to emphasize the necessity of having this blood readily available. Secondly, a spirit of unselfishness and cooperation must exist among the personnel of the laboratory and blood bank, since the detailed processing involved in handling the entire course of this blood necessitates the expenditure of a great deal of energy. The director of the blood bank should not offer objection to the use of blood in such large quantities, since the fear of transfusion reaction has been demonstrated to be more theoretical than real. Obviously, the surgeon is the one who must assume responsibility for any reaction which may occur, since he is well aware of the fact that no patient could survive these procedures if blood were not administered in large quantities, and at times in a rapid manner. Fortunately, the author has not encountered any difficulty in this respect, since the director of the blood bank and personnel have been most cooperative and have taken great pains and expended much effort in obtaining and administering this blood.

The relative safety of infusions of large quantities of blood support the practice of administering blood in any situation where there is any indication to warrant its use. Such situations arise in massive bleeding from the G. I. tract, associated with ulcer, varices, etc., and in hemorrhagic shock, etc. The conservative attitude of giving only small amounts of blood in these circumstances for fear of raising the blood pressure and promoting further bleeding, or of the danger of severe transfusion reactions, is apparently not based on proven fact. Undoubtedly, many patients seen in such a situation have been lost by failure to infuse sufficient quantities of blood.

## SUMMARY

1. Sixteen cases representing formidable operative procedures are presented. All are of relatively recent origin, and the majority represent procedures which have been devised and employed to extirpate formerly hopeless disease.

2. The successful performance of these operations are based on the application of many recent advances, which have made it possible to extend the surgical scope and make these procedures relatively safe.

3. Massive blood transfusions (in one case, 11,000 c.c. of blood and 2250 c.c. of plasma) during the course of operation has been the one dominant factor which has made these surgical procedures possible, although it is well realized that other recent advances have contributed to the safety and success of these procedures.

4. This experience indicates that large amounts of blood can be rapidly infused with relative safety. Severe transfusion reactions are not common, and do not mitigate against the employment of large quantities of blood when indications for administration in this fashion are present.

Acknowledgments:

I wish to acknowledge the untiring efforts and wholehearted cooperation of all the personnel of the nursing staff, operating room, anesthesia, medical, surgical, laboratory and blood bank departments, who participated in the care of these patients.

I also wish to acknowledge and express my appreciation to Dr. A. Henry Clagett, Jr., who supplied and supervised the administration of the quinidine lactate to these patients.

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# ADENOMA OF THE PARATHYROID*

## Preliminary Report of a Case Associated with Osteitis Fibrosa Cystica.

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The diagnosis of adenoma of the parathyroid is made rarely, usually in association with osteitis fibrosa cystica or with recurrent renal calucli. Norris [5] in 1947 collected only 322 proven cases from the world literature. At the Memorial Hospital in Wilmington the diagnosis has been made once previously since 1935, in a series of 70,918 admissions. No case has been recorded at the Delaware Hospital since 1932 in 192,020 admissions, or at the St. Francis Hospital since 1947 in 8,010 admissions. The Wilmington General Hospital reports no cases since 1943 in 35,000 admissions. The first case (J. R., Memorial Hospital #42,764) diagnosed at the Memorial Hospital was operated upon elsewhere (Philadelphia) and the diagnosis confirmed. Only one other proven case has been found in the records of the hospitals of Delaware, a case from the State Welfare Home found at autopsy by Dr. D. M. Gay.

The relationship of parathyroid adenoma to osteitis fibrosa cystica was first suspected by Askanazy in 1904; however the first surgical removal of a parathyroid adenoma was reported by Mandl (4) in 1925. Since then, of the 322 cases collected by Norris (5), 80% were proven by operation, 20% by autopsy. Bilateral tumors occur rarely (6%) and tumors in aberrant positions for parathyroid tissue somewhat more frequently (11%), usually in the mediastinum (8%). Most of the reported cases (60%) showed only generalized osteitis fibrosa. A few (5%) showed only renal lesions such as stone or renal calcification. A larger group (30%) showed both osteitis fibrosa and renal lesions. The remaining showed neither (1.5%) or no record is available (2.5%).

Carcinoma of the parathyroid is extremely rare. In another collective review Norris (6) found 12 acceptable cases in the literature and added 3 more. Albright and Reifenstein (1) know of only 3 unquestioned cases, and found none in their series of 89 proved cases of hyperparathyroidism from the Massachussetts General Hospital. Their series includes 81 parathyroid adenomas and 8 cases of diffuse parathyroid hyperplasia.

The clinical findings in hyperparathyroidism may be considered as those due to bone disease, those due to anatomic or functional kidney disease, and those due to hypercalcemia.

(1) The generalized cystic change in bones is that most often recognized. The so-called cysts, as in the case to be reported, are frequently solid tumors of soft tissue producing rounded areas of bone destruction indistinguishable from cysts in the roentgenogram. The tumors are benign and consist of osteoblasts, osteoclasts, and stroma, resembling benign giant cell tumors. Other cases may show extensive demineralization of bones. Bone pain and tenderness is frequently present. Loss of stature may result from wedging of vertebrae. The jaws may be involved, and giant cell epulis has to be considered as possibly due to a parathyroid disease (vide infra).

(2) Renal disease may be due to hypercalcemia per se, with polydipsia, polyuria, low specific gravity, increased water and electrolyte excretion, or may be associated with calcification of the renal tubes (nephrocalcinosis) or renal calculi. Hypertension, nitrogen retention, and reduced renal function may be found. Since secondary hyperparathyroidism is reported in chronic renal disease, the differential diagnosis may be difficult. In the Massachusetts General Hospital series, contrary to the other reported cases, renal disease was

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*From The Carpenter Memorial Clinic, Memorial Hospital.

commoner than bone disease in association with hyperparathyroidism. Albright and Reifenstein (1) report that 5% of all patients with kidney stones in Boston have underlying hyperparathyroidism as its cause.

(3) Clinical symptoms from hypercalcemia are less definite and are usually noted in retrospect. The patient notices the loss of complaints he had come to accept as the normal accompaniment of ill-health. Muscular hypotonicity, and diminished excitability of nerves explains most of the clinical symptoms. Anorexia, fatiguability, chronic constipation, visual and auditory disturbances may occur. Our patient was amazed by an immediate sense of well-being within a few days of parathyroidectomy, contrary to her previous experience with thyroidectomy.

The diagnosis of hyperparathyroidism is confirmed by blood chemical determinations. The serum calcium is elevated and the phosphorus depressed. The serum alkaline phosphatase is usually elevated, depending on the extent of bone disease present; if the bones are not involved, it may be quite normal. Under some conditions, as in the case to be reported, serum calcium and phosphorus levels may be only slightly altered. Albright and Reifenstein (1) in a series of 35 cases found 9 with serum calcium below 12 mg. and one below 11 mg. Churchill and Cope reported 2 cases of a series of 11 with relatively little change in calcium and phosphorus levels. Particularly if total serum protein is low, calcium values may be low. Mild cases of hyperparathyroidism may be diagnosed by studying the urinary calcium excretion when the patient is on a low calcium diet and NOT confined to bed, (which may cause increased calcium excretion due to bone atrophy of disuse). Such studies were not made in our case. The final proof, of course, is demonstration of the parathyroid pathology.

## Case Report

Mrs. E. R., aged 63, Memorial Hospital No. 83644, was first seen in consultation on 12-17-47, fourteen months after the removal of a tumor of the upper jaw. The tumor, submitted with the patient, was examined microscopically and considered to be a typical benign giant-cell tumor or epulis. There was no evidence of recurrence and no treatment was recommended.

She was next seen on 6-24-49, after hospital admission because of pain in the left groin and difficulty in walking. The initial x-ray examination was reported as showing a destructive lesion in the left pubic bone with pathologic fracture, suggestive of secondary carcinoma. (Fig. 1) Review of the patient's history elicited the following facts of interest: 1. Eighteen years before, a thyroidectomy, apparently for toxic nodular goitre. 2. Tumor of upper gum two years previously. 3. Possible loss of stature. 4. An attack of violent right flank pain two years previously, consistent with passage of a renal calculus, relieved by morphine without further urologic or x-ray studies.

Further x-ray studies showed several bone lesions and also widening of the superior mediastinal shadow, which after fluoroscopy was considered a possible innominate aneurysm. The diagnosis of multiple myeloma or possible osteitis fibrosa cystica generalisata was suggested. The qualitative Sulkowich test was positive. Serum calcium was 11 mg.% and serum phosphorus 4.8%. Serum alkaline phosphatase was 21.8 Bodansky units. Blood urea was 26 mg.%. Urinalysis showed alkaline reaction, specific gravity 1.009, trace albumin, negative sugar, W.B.C. 13-20 per H.P.F. The blood count was R.B.C. 3.36, Hb 11.5 gm., W.B.C. 6,200. Aspiration biopsy of a lesion in the ilium was not conclusive. Surgical biopsy of a cystic lesion of the scapula revealed a purple-red solid mass which microscopically was consistent with von Recklinhausen's osteitis fibrosa cystica. (Fig. 3).

The patient's age, absence of severe systemic symptoms, and relatively normal calcium and phosphorus levels inclined us to withhold immediate treatment. During the ensuing three months her moderate hypertension became more severe. Repeated x-ray examinations in September, 1949 showed increase in the extent and number of bone lesions (except for healing at the site of pathologic fracture). (Fig. 2) On 9-13-49 serum calcium was 12 mg%, phosphorus 4.5 mg%, alkaline phosphatase 31.6 Bodansky units.

On readmission 10-24-49, the blood count was R.B.C. 4.09, Hb 12 gm. W.B.C. 7,900, Polys 67%, Ly 28%, E 5% . Urinalysis: 2 plus albumin, negative sugar, 4-8 round cells, 3-4 squamous, 10-2 w.b.c. Serum calcium 11 mg.%, phosphorus 4.1 mg.%, phosphatase 18 Bodansky units. Blood urea 14, albumin 4.22, globulin 1.98, total proteins 6.2. PSP excretion was 18% in 80 minutes. Urea clearance was 39%. The blood pressure varied from 230/130 to 140/90.

While the blood chemical studies only once showed a serum calcium distinctly above normal, and never showed marked depression of serum phosphorus, the bulk of the evidence pointed to the diagnosis of hyperparathyroidism and the bone biopsy was considered confirmatory. The presence of a superior mediastinal mass on x-ray examination was confusing, since it seemed too large for a parathyroid adenoma. Since renal function was impaired, it was thought that decreased ability to excrete phosphates might explain the failure of serum calcium to rise to higher levels.

The neck was explored through the previous thyroidectomy incision on 10-28-49. Dissection at first was difficult due to scar tissue, but the absence of lateral thyroid veins made it easier. The right inferior thyroid artery had an anomolous origin between the transverse processes of the fourth and fifth cervical vertebrae, presumably from the vertebral artery. At least 5 cm. of the right inferior thyroid artery and 3 cm. of the left were exposed, and no vascular pedicle leading to the mediastinum was present, as described by Black [2] in most cases of mediastinal parathyroid adenoma. All four parathyroid glands were identified in their usual anatomic location. The right superior parathyroid was enlarged, measuring 14 x 8 x 6 mm. in size, and weighing 0.5 gm. Frozen section confirmed the presence of an adenoma and the gland was excised. The other parathyroids were from 3 to 5 mm. in diameter.

The pathologic report describes a discrete encapsulated adenoma making up almost half the bulk of the entire parathyroid gland, hence one of the smallest yet reported, judging from the size and weight of the entire specimen. According to the classification of Mallory and Castlemann [7] it is a benign acinar parathyroid adenoma. (Fig. 4).

The patient's recovery was uneventful. Immediately postoperatively the serum calcium was 11 mg.% and the serum phosphorus 4 mg.%. She was given 5 grams of calcium gluconate postoperatively and 3 grams the following day. At no time did she show signs of tetany. A paradoxical rise in calcium and fall in phosphorus, attributed to overdosage with calcium, was noted. On 11-4-49 serum calcium was 12.5 mg.% and phosphorus was 2.5 mg%. She was discharged on 11-4-49, the seventh postoperative day, feeling better than she had in several years. Further x-ray studies and blood chemistries are planned for the future.

## Summary

The diagnosis of hyperparathyroidism is reviewed. A case of parathyroid adenoma in a 63 year old woman, with a past history of giant cell tumor (or epulis) of gum, osteitis fibrosa cystica and impaired renal function is reported. The blood chemical changes were not typical. The adenoma was unusually small.

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# LIGATION OF THE INFERIOR VENA CAVA

## A Case Report

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This case is presented to relate a sequence of events which occurred during the management of a disease which is ordinarily free of such surgical complications.

It is not implied that any measure used here should be discarded.

This case report is submitted with the hope that it may be of value to those who encounter a similar case.

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*Associate in Surgery, Memorial Hospital.

### Case Report

A.S.R., a 60 year old white male was first seen as an office patient on 3-29-48 with the chief complaint of "pain in my calves." This symptom had been present for one year and had been getting worse for several months. At the time of the initial examination he would have to stop and rest after walking two blocks because of cramping pain in both calves. He had noted no postural variation in the color of the extremities or any susceptibility to extremes of weather. The patient believed that the right foot felt colder to touch than the left. He gave the history of smoking one carton of cigarettes each week.

The past history revealed that he had had C.N.S. lues several years before. After treatment, however, there was a reversal of the spinal fluid Wassermann to normal with disappearance of delusions of grandeur and other manifestations of the disease.

The physical examination revealed the following: B.P. 132/78, neurological examination negative; heart, lungs, and abdomen negative. The lower extremities were of good color and cool to touch. There was no plethora or blanching with elevation or dependency of the extremities and there was no calf tenderness. No dorsalis pedis pulsation was felt on either side, and palpation of the posterior tibial and popliteal pulses gave equivocal results. The femoral pulsations were both of good volume.

The clinical diagnosis was intermittent claudication due to arteriosclerosis obliterans. Hospitalization for study and possible surgery was recommended.

The patient was admitted to the hospital on 4-5-48. It was found that walking up and down the hospital corridor 8 times produced claudication. Paravertebral block with 2% procaine was then done on the right side and the patient was again asked to walk the corridor. After 8 trips pain occurred on the left but not on the right. Care was taken not to suggest to the patient on which side he might expect relief. The opposite side was then blocked with procaine. After this, the patient had unlimited walking distance with no pain appearing in either extremity.

Skin temperature recordings taken with the thermocouple were inconclusive and gave no objective findings to correlate with the apparently marked subjective improvement. It was, therefore, decided to test the patient with Etamon (tetra-ethyl ammonium chloride). Accordingly, on 4-8-48, 300 mg. of the drug were injected intravenously. This was felt to be a safe dose for a subject whose weight was 158 lbs. Skin temperatures were recorded every 15 minutes and again found to be equivocal. Though all went well for a while, after 50 minutes he began to have respiratory difficulty which at first seemed merely to be due to inability to cough mucus out of his trachea. This respiratory difficulty increased, so that within 10 minutes of its onset it had reached fairly alarming proportions. (It is worthy to note here that the effects of Etamon will usually be passing off by this time.). One c.c. of adrenalin 1:1000 was given hypodermically to counteract the effect of etamon. This had no beneficial effect and within a matter of seconds all respiratory efforts ceased, intense cyanosis appeared and, except for a full bounding radial pulse, the patient appeared moribund. Emergency tracheostomy was performed on the spot with very inadequate and improvised equipment.

By extreme good fortune, the staff anesthesiologist happened to pass by and, grasping the situation at a glance, brought up a gas machine and delivered oxygen under pressure through the tracheostomy.

Considerable difficulty was subsequently encountered in controlling recurrent bleeding from the crudely constructed tracheostomy wound. This, however, was soon controlled.

The emergency was terminated when the patient coughed up a long clot, after which his respiratory exchange and color immediately improved and he became fully conscious.

Though fever reached 103° (oral) on the second post-tracheostomy day, all vital signs subsided with penicillin and adjuvant measures. The tracheostomy tube was removed on 4-17-48 and the wound was closing satisfactorily when he was discharged three days later.

He was readmitted on 5-17-48 because of pain in the right lower chest, dyspnea, nonproductive cough, and low grade fever. Two plus pitting edema of both ankles was present at that time. Bronchoscopy was negative for evidence of disease, but, immediately following bronchoscopic examination, he coughed up old dark blood after which his temperature came to normal and chest pain, dyspnea and cough disappeared.

X-rays showed changes in the right lower lobe which the roentgenologist thought was not in keeping with clinical suspicion of pulmonary embolism.

The patient was then referred to a specialist in cardiovascular diseases who, after an intensive effort to achieve amelioration of the patient's complaints, recommended that only sympathectomy offered hope of improvement.

Bilateral lumbar sympathectomy was done in stages on 7-13-48 and 7-20-48 through the now conventional extra-peritoneal approach. The patient was ambulatory on the first post-operative day after both procedures and was discharged on 7-28-48, after an apparently completely benign post-operative convalescence.

He was readmitted 8-1-48 because of pain in the left chest, cough and hemoptysis. X-ray confirmed the clinical diagnosis of pulmonary embolism.

Bilateral superficial femoral vein ligation was performed as an emergency procedure. However, the right superficial and common femoral veins contained adherent thrombus which could not be evacuated. He was, accordingly, placed on complete bed rest and anti-coagulation therapy with heparin and dicumarol. The former was discontinued when an adequate effect on the prothrombin time had been achieved.

A very profound prolongation of the prothrombin time was accomplished and after two weeks the patient was permitted out of bed. He promptly reported mild chest pain and x-ray revealed that several more pulmonary infarcts had occurred dispite highly effective depression of the prothrombin activity of the blood.

Ligation of the inferior vena cava was decided upon since there seemed no other way of controlling recurrent emboli with the high probability of sudden and fatal outcome. Accordingly, on 8-17-48, the patient was taken to the operating room after receiving a large dose of vitamin K intravenously.

The inferior vena cava was exposed through trans-peritoneal approach and ligated in continuity with two ties of umbilical tape. Following operation, he developed fever up to 103° (rectally) on the second post-operative day, which subsided satisfactorily without antibiotics. Slight ecchymosis of the scrotum and base of the penis developed, as well as moderate abdominal distention and diarrhea. All these passed off with conservative measures. Only slight edema of the dorsum of the left foot was detectable.

The patient was discharged on the 15th day after caval ligation. He was still running fever to about 99-99.2° (orally) every day but it was believed that this was due to organization and absorption of the thrombus and emboli.

About 4 weeks later he had only slight edema of the left lower leg but none on the right.

On 6-10-49, ten months after caval ligation, he stated he could walk for an unlimited distance without calf pain. He had completely discarded his elastic bandages and had no edema at all. He did, however, have mild exertional dyspnea, possibly due to fibrotic changes in the lung resulting from healing of the numerous infarcts.

## Comment

Shumaker, in a thorough review of several hundred cervical and lumbar sympathectomies, emphasizes the rarity of important complications and sequellae and concludes that it is a highly satisfactory procedure with a wide margin of safety even in poor risk patients.

My comparatively small experience coincides with this conclusion completely, with the one outstanding exception of the case cited above.

Interestingly enough, Coller et al, in their report of end-results of sympathectomy for arteriosclerosis note that none of their patients achieved unlimited walking distance. The patient in this case did achieve this, the one bright feature in an otherwise trying case.

## Summary

1. A case of intermittent claudication is

reported which developed an unusual reaction to Etamon.

2. Thrombo-embolic disease complicated the management and, failing to respond to anti-coagulation therapy, finally required ligation of the inferior vena cava.

3. The patient recovered and has unlimited walking distance.

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## What Next?

We invite the attention of our membership to the official statement of the Democratic Party in its platform adopted at the 1948 convention: "We favor the enactment of a national health program for expanded medical research, medical education, and hospitals and clinics." We do not find in that platform any further official reference concerning Federal aid to improve national health.

A number of bills introduced into the Congress since 1948 have apparently sought by quite proper legislative procedure to implement such a program. Presumably hearings on these bills, if and when reported out of committees, will follow the usual course with opinions pro and con being afforded the opportunity to be heard.

Meanwhile, a booklet, "National Health Insurance, What It Means To You," prepared by the self-styled Committee for the Nation's Health, seems to be appearing in nation-wide distribution from some source. This brochure and questionnaire is openly favorable to the welfare state medical program, as might be surmised from its preparation by Dr. Channing Frothinham's organization, of which the executive committee, according to Mr. John O'Donnell, lists, among others, Mrs. Franklin D. Roosevelt, Chester Bowles, Mrs. Mary Keyserling, John Gunther, and Newbold Morris.[1]

The booklets "go out in envelopes which in the upper left hand corner carry the words: 'Democratic National Committee, permanent headquarters, 1200 18th Street N.W., Washington, D. C.' "[1] it would thus appear that their distribution is under-written in a manner to cause recipients of the booklets to infer at least endorsement of the contents—a program for socialized medicine—by the Democratic National Committee.

Apparently many members of the Democratic Party do not see eye to eye with the proponents of national compulsory health insurance, nor do they seem to approve of this particular action of the national committee. To quote Mr. O'Donnell again:

> The staunchly democratic Daily Advance of Lynchburg, Virginia, in an editorial entitled "What Price Democrats?," angrily observes that there are "several things that Democrats who are not Fair Dealers would like to know," and asks the questions:
>
> "By what procedure of the Democratic Party was the Democratic National Committee authorized to be the promoter of socialized medicine? How many and what members of the Democratic National Committee know about or participated in this promotion?
>
> "Is it one of the recognized and legitimate functions of such a committee of one of the two major political parties to so function? What other spurious and undemocratic procedures is the Democratic National Committee promoting in the name of the Democratic Party?
>
> "They (Democrats) should demand to know whether their national committee has tacitly prefixed 'Socialist' before Democratic National Committee and thereby secretly or semisecretly split away from the Democrat Party as real Democrats know it."

We feel that, irrespective of party affiliations, it is surely time for Americans to examine how far we have gone along the devious path toward socialism. A recent book, *The Road Ahead*, by John T. Flynn, an economist, is well worth careful study by those who would inform themselves of the background of this important subject.[2] Intelligent opinion on much of what has happened in this country and on what is to come must be founded on comprehensive study of recent history. Mere criticism of political mechanics, artful dodges, and sly maneuvers such as we have illustrated is pointless. Thinking men and women will not be materially influenced but more likely nauseated by such tactics.

We urge our membership of whatever political affiliation to do its own thinking, based on serious study of available sources of real information. It is the duty and privilege of each citizen-taxpayer to do so.

Editorial, *N. Y. St. J. M.*, April 1, 1950.

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[1] Daily News, February 14, 1950.

[2] The Devin-Adair Company, New York City.

# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Vol. 22 April, 1950 No. 4

## The Mother's Milk Bank

It is hard to visualize a food shortage in Delaware, but the oldest food known to humans — mother's milk — is too frequently on the fringe of being in short supply.

Despite the persistent and commendable efforts of the ladies who conduct the important functions of the Mother's Milk Bank, the stock is normally just about sufficient for current —and urgent — needs, with little or no reserve. The Mother's Milk Bank is a service of the Junior Board of the Delaware Hospital, and its existence and inventory are of vital importance to every hospital and physician in the state, since the Bank is the only one in Delaware or this whole area.

Keeping the supply of mother's milk large enough for current requirements, with ample reserve, is the responsibility of every doctor. The mere sanctioning of the idea by members of the medical profession individually and collectively is not enough. Every mother at the time of a birth, should be reminded of the Bank and its importance stressed by the physician in attendance.

The Mother's Milk Bank Committee works hard at its laudable task and plans to publish material to hammer home the need for this activity. But the most diligent efforts of these worthy volunteers can go for naught without the active, spoken support of the physician *in every natal case.*

The mother of a new baby, particularly a first baby, is usually inundated by a diversity of suggestions from well-meaning relatives and friends regarding the care of her baby. For the most part, the suggestions run contrary one to another and the new mother becomes confused. Too often she is in the position of a person with a cold listening to suggestions about home cures. And too often the attending physician is not sufficiently insistent upon the mother nursing her new baby!

In the midst of this all-too-often confused mental state of the new mother, the Mother's Milk Bank Committee is expected to get across the story of its service and the need thereof. Unless the attending physician speaks up, plainly and emphatically, in support of the Bank, the new mother may readily forego contributing to it at the moment when she is best in a position to help the babies of less fortunate mothers.

Speak up, Doctor, and tell your patients about the Mother's Milk Bank, its function and its importance. Speak up in every case, because upon you rests the responsibility for the Bank's existence and continuance. Who can tell when your patient may be the next to need its milk?

### SURVEY OF PHYSICIAN'S INCOME

Toward the end of April the AMA and the United States Department of Commerce will begin jointly the most complete and authentic survey of physicians' incomes in the history of this country. This is the first full-scaled survey of this type since 1941 and it should prove more complete and valuable. The Commerce Department points out that returns will be used for statistical purposes only, and in no way will they be made available to the Internal Revenue Bureau. The AMA is addressing the first 100,000 to every other name on its roster, which takes in members and non-members. These physicians get the short form, covering income only for 1949. An additional 10,000 get the same form, but these envelopes will bear code numbers. Code numbers also will be used on another group of 15,000 long forms, covering income from 1945 through 1949. Approximately 62½ per cent of the nation's physicians will be contacted. The code number will be used only for a follow-up letter from the AMA to be sent to those who delay returning the questionnaire. The Commerce Department does not receive these codes; its analysis will be conducted on blind, unidentified forms. The doctors of Delaware are urged to fill out and return their questionnaires accurately and promptly.

### NEARING THE DANGER MARK?

With trends in this country pointing more and more towards socialism, how far do we yet have to go in these United States before we run the risk of becoming not merely a socialistic nation but a communistic nation? Here is food for thought: in 1917 Russia had but one communist in its borders for every 2,277 citizens; in 1947 the United States had one communist for every 1,814 citizens, 20% more than the number that was able to effect the Bolshevik Revolution and the installation of communism in Russia. Something to think about, isn't it? Our superior education and experience with freedom are the only bulworks between us and communism. Hold fast, America, hold fast!

### ENTER "GP"

We have received Volume I, Number I, of "GP," the new journal by and for the general practitioner, edited and published by the American Academy of General Practice at Kansas City, Missouri. This first issue contains 132 pages, including cover, and carries a splendid series of articles and editorials and an amazing amount of the better class advertising for a brand new journal. We wish "GP" every success in the world, and if their first issue is any criterion of what is to follow, it will have a very successful career.

### PAPERS! PAPERS! PAPERS!

The time has now come for the doctors of Delaware who wish to present papers at the next annual session of the Medical Society of Delaware, to be held at Dover, October 2-4, 1950, to make the fact known to the Executive Secretary. The program should contain five or six worthwhile papers by Delaware doctors, and those who wish to be on the program should send at least the title of the paper to this office, *promptly*.

---

We have learned that you cannot put a patient's mind in a cast. The tuberculosis experience is an interesting example of this. The great problem of the tuberculosis sanatorium is people leaving against medical advice. We have been foolish enough to expect patients to rest idly in bed and not to worry, but worries about families, jobs or money, go round and round in their heads until they decide to give up treatment and go home. Howard A. Rusk, M.D., Nat. Foundation for Infantile Paralysis.

* * *

City-wide X-ray surveys can be conducted with relative economy of means and money. Previous experience in cities already surveyed and preliminary studies of other communities indicate that if present facilities are fully utilized and if newly discovered cases are given realistic disposition, the increased case load of tuberculosis will not present a grave problem to the community. Francis J. Weber, M.D., Ohio Pub. Health, Feb., 1948.

## WOMAN'S AUXILIARY

### New Castle County Medical Society

The Executive Board would like to take this opportunity to contact all members of the New Castle Auxiliary and especially to welcome all new members.

As we formulated our program for the year we have tried to keep in mind the five purposes of the Auxiliary which are:

1. To extend the aims of the medical profession to all organizations which look to the advancement of health and health education;
2. To cultivate friendly relations and mutual understanding among physicians' families;
3. To participate in any endeavor on the request of the American Medical Association and of its constituent Medical Society of Delaware;
4. To coordinate and advise concerning the activities of constituent auxiliaries;
5. To assist in the entertainment at all conventions of the American Medical Association.

We also thought that you might be interested in knowing all of our county officers and committee chairmen:

| | |
|---|---|
| President | Mrs. R. B. Thomas |
| Vice-President | Mrs. H. T. McGuire |
| Secretary | Mrs. John Alden, Jr. |
| Treasurer | Mrs. H. H. Stroud |
| Public Relations | Mrs. Lemuel McGee |
| Sewing | Mrs. L. J. Rigney |
| Legislation | Mrs. W. E. Bird |
| Hospitality | Mrs. I. Charamella |
| Membership | Mrs. Millard Squires |
| Program | Mrs. J. R. Durham, Jr. |
| Revisions | Mrs. C. E. Wagner |
| Finance | Mrs. John H. Mullin |
| Press and Publicity | Mrs. Mark Holzman |
| "Today's Health" | Mrs. John Barnhart |
| Ways and Means | Mrs. H. T. McGuire |

To bring our program up to date mention should be made of the successful Christmas Party and Bridge Luncheon given in December and January. The Christmas Party was held in the Academy for the children of the Auxiliary members, and was planned by Mrs. I. Charamella and her committee. The Bridge-Luncheon held in the DuBarry Room was a Ways and Means project under the leadership of Mrs. H. T. McGuire. From now until June we have a calendar of events that we hope will appeal to all of our members.

*Public Relations Program - May 3rd*
*2 P. M.*

A most important Public Relations Program is being worked out by Mrs. Lemuel McGee and her committee. It will be in the form of a discussion and tea to be held in the Academy of Medicine. Dr. A. R. Shands will discuss the Aspects of Socialized Medicine. Invitations are being sent to all organized women's groups. *All members are urged to attend this most important meeting.*

Another Public Relations project under the direction of Mrs. Roger Murray, state chairman of Public Relations, is worthy of our support. Every Wednesday at the Academy between 10 A. M. and 4 P. M., she and her committee are making surgical dressings for the American Cancer Society. All who can spend some time on Wednesday doing this are needed.

*Ways and Means - April 19th - 1 P. M.*

Mrs. H. T. McGuire is planning a small benefit bridge to be held at the Academy. The reservation chairman will be announced later; however the cost will be $1.00 per person. There will be table and door prizes.

*Sewing Meetings - 3rd Tuesday of Month*
*8:15 P. M.*

If attention is paid to the date it can be seen that this is also the night that the doctors have their county society meetings, so it makes an ideal time for the auxiliary members to meet at each other's homes to put the finishing touches on baby garments used by the Visiting Nurse Association. Mrs. L. J. Rigney announces that to date 64 garments have been finished this year. The next meeting will be on April 21st at the home of Mrs. R. B. Thomas, 8 Vining Lane, Westhaven. All members are invited, and Mrs. Rigney assures us that sewing skill is not needed.

*3rd Annual Dinner Dance*

We hope that you are already planning to attend the Third Annual Dinner Dance in May. Mrs. Junius A. Giles, Jr., is Chairman.

This affair is not a Ways and Means project but just our social highlight of the year. This should be a gala night for the doctors, their wives, and their friends.

The Executive Board would also like to salute the State Ways and Means Chairman, Mrs. Jos. Davalos and her committee for the wonderful work they did in their sponsorship of the Drama League play. It was a huge success. The proceeds from this play will be used for the Nurses Scholarship Fund.

Our projected Book Machine is proving very useful. Mrs. Richard Allen reports that it has traveled to all of the city hospitals and that the patients that use it are so very grateful. She would like some volunteers to assist with its operation. For this job a car is needed, and if any members are interested in this endeavor call Mrs. Allen 4-9969.

We of the Executive Board hope that this letter has given all auxiliary members a better understanding of the work that is being done, and that some phase of our program will interest each one. All committees are open and all committees need YOU. Your cooperation is solicited.

Sincerely,
*The Executive Board.*

P. S. Try to secure a copy of the Delaware State Medical Journal — January 1950 — Vol. 22. In the back is a roster of the members of the Delaware Medical Society. An asterisk (*) after their name indicates that the wife is a member of the Auxiliary. Save this volume and you will have an almost complete membership list.

## TOWARD EFFECTIVE CANCER CONTROL

Charles S. Cameron, M. D., *
New York, N. Y.

Nowhere in the world do voluntary health agencies flourish in such abundance as they do in the United States. They are an expression of the charitableness of our people toward those less fortunate, and they are testimony to the democratic spirit of Americans in organizing and working cooperatively for the common good.

The American Cancer Society, a venerable member of the family of health agencies, should be thoroughly known to all doctors, for its services are many. Through its national office in New York, its 61 chartered divisions and 2,613 county branches, it conducts a broad-based year-round effort to control cancer, one of the foremost medical problems confronting us.

The control of cancer eventually will come through an understanding of cancer's causes, means of prevention and effective treatment methods; this knowledge waits on research. The Society has recognized the importance of intensified investigative efforts in the field of growth and spends 25 per cent of its income in the support of such studies and in the training of young scientists to carry them forward. During the present year this support amounts to $3,500,000. The total research expenditure for the past five years is $13,153,560.

A substantial measure of control over cancer can be achieved today with the knowledge already at hand. The disparity between cancer's *curability* and the cures being achieved is striking. For example, cancer of the breast is curable in 80 per cent of patients who are treated when the disease is confined to the breast; yet the country-wide cure rate is less than 35 per cent. When cancer of the rectum is confined to the mucosa cure rates of 70 per cent have been reported; yet the overall rate of cure is about 11 per cent. Similar differences hold for most forms of the disease. In order to achieve a larger measure of cures the American Cancer Society engages in an intensive educational and publicity campaign, based on knowledge of cancer's early signs and symptoms (the danger signals), and the value of periodic physical examinations.

April is the month when the American Cancer Society makes its annual appeal to the public for support of its programs. As more and more of our people live longer, the incidence of cancer increases. As the problem becomes more widespread, so must the effort to control the disease be intensified. The Society is dedicated to the principle that through education an effective measure of cancer control may be achieved at this time.

Improved services to patients with cancer are provided by support of cancer clinics, organized programs of cancer detection and information services; these efforts are augmented by a corps of volunteers who provide loan closets, transportation services, recreational activities and dressings.

---

*Medical and Scientific Director, American Cancer Society.

Of immediate interest to doctors is the professional education program. During the past year three monographs of a series dealing with cancer by anatomic site have been distributed to practicing physicians throughout the country. The series will be continued this year, with distribution at three-month intervals.

The professional journal CANCER, which first appeared in May, 1948, has been well received by clinicians and investigators interested in the problems of abnormal growth. A series of motion pictures for professional audiences, treating the problems of early diagnosis of cancer by anatomic site, has been outlined. Two of the films have been released, the first concerned with the general problem of the early diagnosis of cancer and the second concerned specifically with the early diagnosis of cancer of the breast. A third, covering cancer of the gastro-intestinal tract, is in preparation and will be released this year.

A new publication of the Society will appear this year, and will be distributed bimonthly to practicing physicians throughout the country. Topics of interest to the general practitioner will be presented in digest form, together with brief abstracts of significant papers appearing in the literature. Clarity, brevity and general interest will be stressed. It is the Society's hope that this digest will be accepted by the busy physician for whom it is planned.

The library of the Society publishes monthly a bibliography of the current cancer literature which is available on request to physicians, research workers, and libraries. The library will prepare, on request, bibliographies on any topic related to the field of cancer. A package lending library has been established which will supply reprints, on a loan basis, to any physician or investigator requesting the service.

Tuberculosis mortality in the U. S. Zone of Germany began to rise promptly at the beginning of World War II, reached a peak in 1945 and has progressively declined in 1946 and 1947. The extent of the rise was only moderate as compared with that in several other European nations. Philip Sartwell, M.D., Charles H. Moseley, M.D. and Esmond R. Long, M.D., Am. Rev. Tuberc., May, 1949.

* * *

BCG vaccine has joined the conventional forms of tuberculosis control in Alaska. With a tuberculosis mortality rate nine times that of the United States, the last outpost of America is mustering every known weapon in its fight against tuberculosis. Elaine Schwinge, M.D., Nat. Tuberc. A. Bull., May, 1949.

## BOOK REVIEWS

Diseases of the Heart. By Charles K. Friedberg, M.D., Associate Physician, Mount Sinai Hospital, New York. Pp. 1081, with 79 illustrations. Cloth. Price $11.50. W. B. Saunders Company, Philadelphia.

This textbook of "Diseases of the Heart" is well written, authoritative, and complete, written mainly from the standpoint of pathological physiology. Its use as a reference work is enhanced by a complete bibliography and index.

Your reviewer has one major and several minor criticisms, all of which are offered in a constructive spirit.

The main fault of the book is the relatively few illustrations. Furthermore, several of these are of poor quality in regard to both content and technique. It is hoped that the author and publisher will concentrate on more abundant illustrations of better quality in the next edition.

The minor points with which your reviewer takes exception will be listed for the sake of brevity:

1. The discussions of therapy are rather sketchy in places. The treatment of auricular flutter — both under "digitalis" on page 177, and again under "tachycardias" on page 271 — leaves much to be desired in a work of this magnitude. The discussion of the use of digitalis in the treatment of thyrotoxicosis with

auricular fibrillation and cardiac decompensation, on page 925, also is too superficial. On the other hand, the discussions of "rest," appearing on pages 161 and 483, are both masterfully written. The author should attempt to bring his other discussions up to the level of clarity, completeness, and common sense attained in these passages.

2. Bilateral eyeball pressure, as recommended on page 265, is not universally accepted as being without danger.

3. Your reviewer feels that the indications for pericardial aspiration (page 514) are too broad, and that this potentially dangerous procedure should be limited to (1) relief of cardiac tamponade and (2) diagnosis only if purulent effusion is suspected. In the latter case, a thoracic surgeon should be on hand to effect proper treatment (surgical drainage) should pus be found.

4. Venous hum should be included in the differential diagnosis of the aortic diastolic murmur on page 589. The statement that a co-existing systolic murmur makes syphilitic etiology more likely is too dogmatic. Furthermore, the term, "sea-gull murmur," is too general to be associated only with one specific diagnosis such as rupture of the aortic valve.

5. It would be better to discuss "funnel chest" under "functional manifestations" rather than under "corpulmonale," as it has no definite relationship to the latter condition.

Your reviewer thinks it remarkable that a critical evaluation of a 1081 page book resulted in so few adverse findings.

This book is without doubt the best text on the subject in the English language. It certainly will live through many successful editions and should be in the possession of every physician who ever sees a patient with heart disease.

---

Electrocardiography: Fundamentals and Clinical Application. By Louis Wolff, M.D., Visiting Physician, Consultant in Cardiology and Chief of the Electrocardiographic Laboratory, Beth Israel Hospital; Associate in Medicine, Harvard Medical School. Pp. 187, with 110 illustrations. Cloth. Price $4.00. Philadelphia: W. B. Saunders Company.

Although no new material appears in this book the author has succeeded in presenting a most difficult and confusing subject in a simple and understandable manner. It is unfortunate that he has entirely omitted a discussion of the cardiac arrhythmias. Because of this, the book cannot be recommended as a textbook of electrocardiography, but it should be read by every physician interested.

---

Orthopedic Nursing. By Hunston and Calderwood. Second edition. Pp. 628, with 208 illustrations. Cloth. Price $4.25. St. Louis; C. V. Mosby Company.

This is a complete volume on general orthopedic nursing, which is greatly needed today in every general hospital. A comprehensive outline of the various orthopedic principles and procedures is given to acquaint the nurse with her responsibility in the handling of patients. It is properly emphasized that judicious nursing care can prevent many discomforts and complications in a patient who must be in bed for prolonged periods of time.

All types of traction, fractures, and dislocations and their nursing care are well described.

Poliomyelitis is discussed in detail in two chapters. Many statements are made in Chapter XXXV which need revision in the light of present-day knowledge. Disapproval is expressed of the Kenny method of treatment for muscle spasm and muscle pain, yet no substitute is offered for these nor for the elimination of contractures and deformities, though many surgical procedures are described for their correction.

Chapter XXXVI, on the nursing care of poliomyelitis, is quite complete and well done. It emphasizes the necessity of careful isolation of the patient because of the dangers of "person to person contact plays a large part in the spread of the disease." The Kenny hot pack technique is discussed in detail. An excellent discussion on the nursing care of the polio patient in the respirator, with tracheotomy, and in braces, is outlined.

Muscle relaxing drugs as prostigmine and curare are mentioned briefly. The use of curare is discouraged without giving any justifiable reasons.

In general this is a good reference book for nurses.

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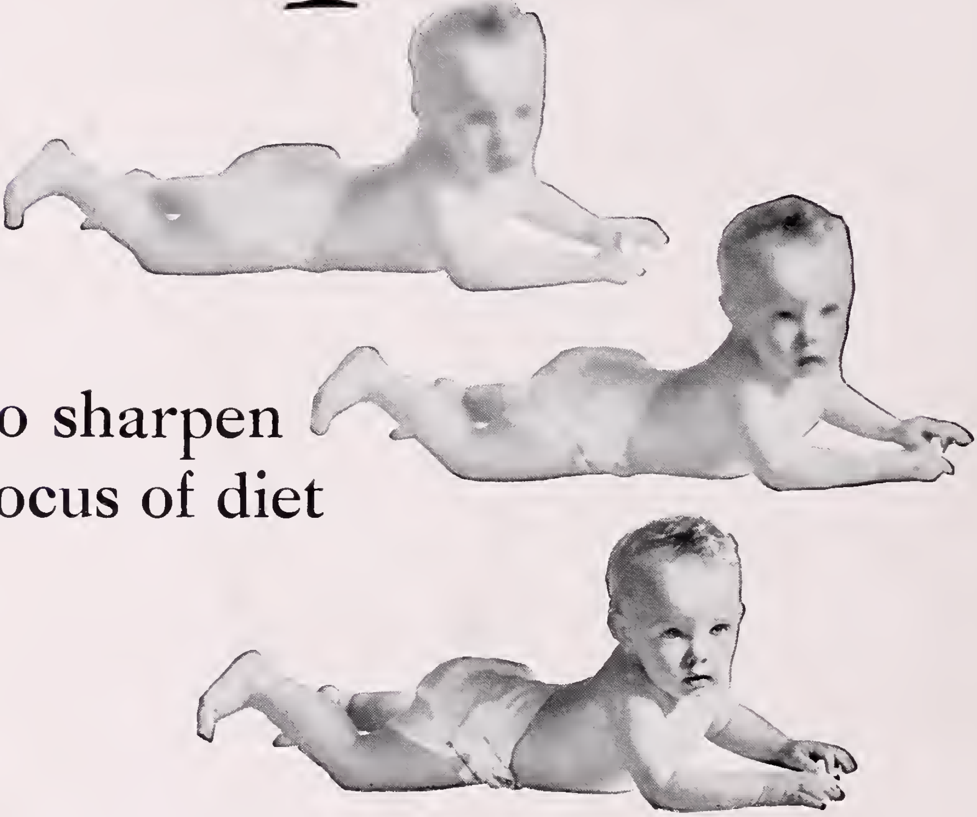

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# DELAWARE STATE MEDICAL JOURNAL

*Official Organ of the Medical Society of Delaware*
INCORPORATED 1789

VOLUME 22
NUMBER 5

MAY, 1950

Per Copy, 50c
Per Year, $4.00

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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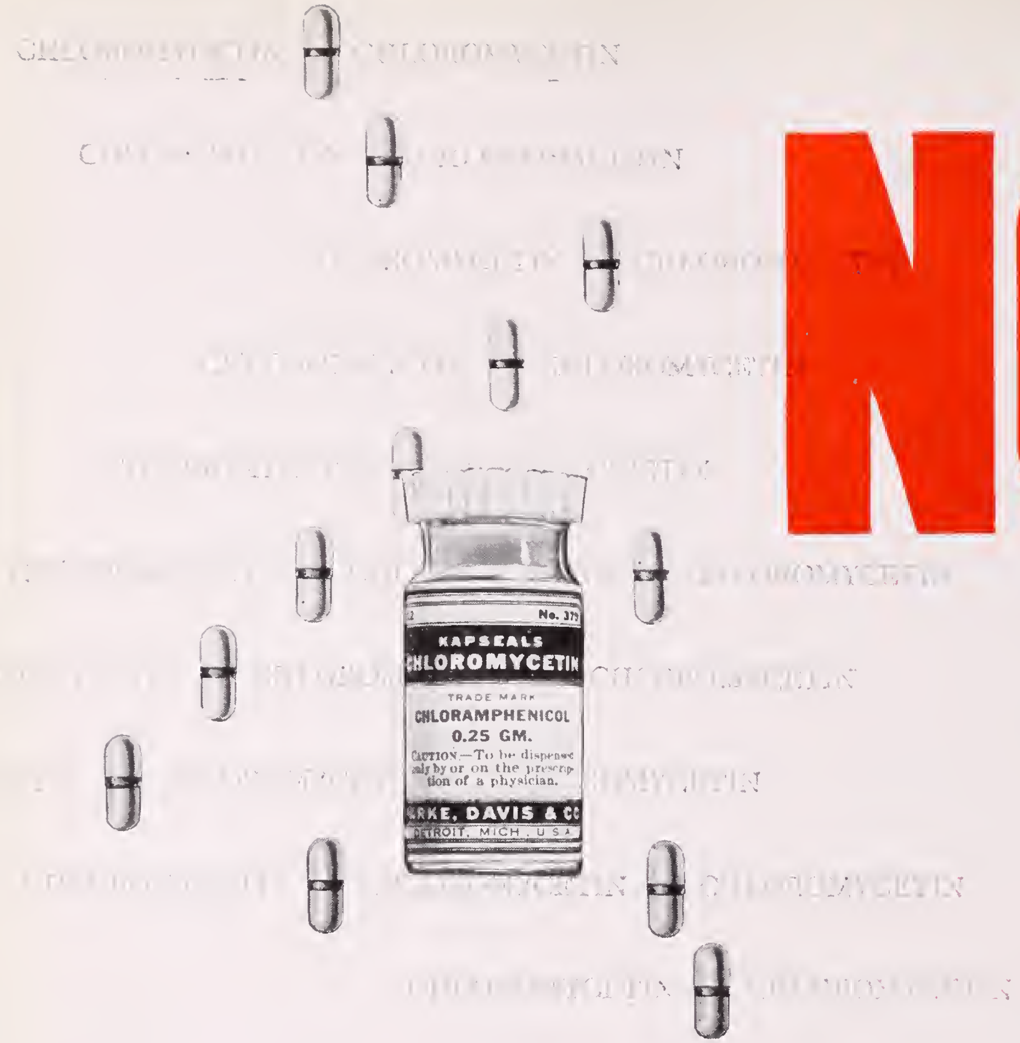

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## SYMPOSIUM*

## The Diagnosis and Management of Benign and Malignant Lesions of The Stomach

## PHYSIOLOGIC ASPECTS**

Thomas E. Machella, M. D.
Philadelphia, Pa.

It is planned to review those anatomic features and physiologic functions of the stomach which appear to be of practical significance in the diagnosis and medical as well as surgical management of benign and malignant lesions of the stomach.

### A. Anatomical Considerations

The anatomic landmarks of the stomach are familiar to all and need not be reviewed. There are some anatomic features, relative to changes in position of portions of the stomach in the abdomen which are worthy of comment.

**1. Variations in position of stomach in the abdomen.** The stomach does not occupy a fixed position in the abdomen. The greater curvature of the distal stomach rides low when the subject is in the erect position; it rises when the supine position is assumed, the degree depending on the amount of material in the stomach. Failure to take such variations in position into consideration when constructing a gastroenterostomy may lead to difficulties with proper emptying of the gastric remnant. The surgeon should keep in mind the fact that individuals spend most of their working hours in the erect position while gastric surgery is performed with the patient supine.

**2. The fundic pool.** Another important anatomic feature concerns the relationship of the fundus to the antrum and pylorus. When the patient is in the erect position the lowest portion of the stomach is the distal greater curvature; in the supine position the lowest portion is the posterior wall of the fundus and the uppermost, the portion of the stomach which overlies the vertebral column, the distal antrum. This means that when the patient lies in the supine position, gastric secretions and ingested food, fluid or medication pool in the fundus. Unless the patient is turned on his right side or assumes a semi-Fowler position, stagnation of gastric content in the fundus may give rise to anorexia, nausea, regurgitation and a failure to obtain the expected effects of orally administered rugs.

**3. Innervation of the stomach.** The stomach has a double innervation, an extrinsic and an intrinsic. The extrinsic consists of the sympathetic and the parasympathetic (vagus). The intrinsic consists primarily of Auerbach's plexus. Though the results of stimulating either set of extrinsic nerves in animals are not always predictable, in general it is commonly accepted that the parasympathetic is motor (excitatory) to all of the stomach except the sphincters, while the sympathetic is inhibitory to all of the stomach except the sphincters. There exists a feeling on the part of some that the pylorus and the rest of the stomach react similarly when their extrinsic nerves are stimulated.

### B. Physiologic Considerations

### 1. Reservoir.

One of the important functions of the stomach is that of a reservoir. Ordinarily the stomach empties a mixed meal in $3\frac{1}{2}$ to 4 hours at an estimated rate of 10 to 15 cc. per minute. During this time, hypertonic materials are diluted to a proper concentration prior to their admission to the small intestine. When the gastrointestinal tract is deprived of its gastric reservoir, as after a gastric resection, ingested materials may sometimes enter the intestine promptly and cause unpleasant symptoms such as the post-gastrectomy "dumping" syndrome (1), diarrhea, loss of weight and other evidences of malnutrition.

---

*Read before the Medical Society of Delaware, Wilmington, October 12, 1949.

**From the Gastrointestinal Section (Kinsey-Thomas Foundation) of the Medical Clinic, University Hospital, University of Pennsylvania, Philadelphia.

### 2. Secretion

The stomach secretes acid, enzymes and mucus. The secretion of gastric juice is continuous and amounts to about 2500 cc. in 24 hours; secretion occurs during the night as well as during and between meals. Night secretion of duodenal ulcer patients is larger in volume and higher in acidity than in normal subjects. (2). Numerous measures can be employed to control acidity during the waking hours, but a lot of the good accomplished during the daytime may be undone during the night when the patient is asleep. The unneutralized acid, secreted during the night, should be kept in mind in the management of peptic ulcer patients, particularly those having night pain.

Hydrochloric acid is secreted by the parietal cells of the proximal stomach at a concentration of about 0.5 per cent. This fact must be taken into consideration when performing gastric resection, because if an adequate amount of the secretory tissue is not resected, acid may continue to be secreted at a considerable rate to give rise to peptic ulceration of a susceptible jejunal mucosa. In the operation of simple gastroenterostomy, failure to decrease the size of the acid-secreting area of the stomach has been one of the factors responsible for a high incidence of marginal ulcer.

The pyloric region is the site of formation of the gastric secretory hormone when gastric secretogogues (foodstuffs) contact the mucosa of this area. It is for this reason that this area should also be resected in the surgical treatment of duodenal ulcer.

### Phases of Gastric Secretion

There are three phases of gastric secretion —a) nervous or psychic, b) chemical or hormonal and c) intestinal.

a) **Nervous phase.** The nervous phase consists of the gastric juice secreted in response to the looking forward to an appetizing meal as well as that which is increased in amount and acidity in peptic ulcer patients. The impulses responsible for this phase of gastric secretion arise in the central nervous system and reach the stomach by way of the vagus nerves, consequently the operation of vagotomy was devised for the purpose of eliminating this phase of gastric secretion. The "completeness" of the destruction of the vagal innervation of the stomach is tested for clinically by inducing hypoglycemia by means of insulin. Twenty units of regular insulin are injected intravenously. In 30 to 45 minutes the blood sugar attains hypoglycemic levels and acid gastric juice is secreted at a rapid rate. The response does not occur if the gastric branches of the vagi have been destroyed.

b) **Gastric, humoral or chemical phase** consists of the gastric juice secreted in response to the chemical presence of food in the stomach. The food in some manner reacts with the mucosa of the pyloric end to produce a substance whose exact nature is uncertain but which enters the blood stream and causes parietal cells to secrete hydrochloric acid. The gastric phase is tested for by the administration of a test meal or of alcohol (50 cc. 7%), or by an injection of histamine (0.3 cc. 1/1000). Meat and especially meat extracts, stimulate, while fats inhibit the chemical phase of secretion. Carbohydrate exerts no influence.

c) **Intestinal phase** consists of the gastric juice secreted in response to the presence of products of gastric digestion in the duodenum and small intestine; it is humoral and is not abolished by vagotomy. The intestinal phase is responsible to a large extent for interdigestive secretion.

### Gastric Analysis

Useful information can be obtained from the procedure of fractional gastric analysis but only if it is properly carried out. Saliva should not be swallowed during its performance because salivary mucus can absorb free hydrochloric acid and mask a hyperchlorhydria. The tip of the tube should be in the antrum. The samples of gastric juice should be filtered and titrated promptly because, on standing, hydrochloric acid tends to disappear as a result of neutralization or absorption by the test meal and/or mucus.

**What can be learned from a gastric analysis.**

1. **Volume and character of fasting contents.**

a) The volume of fasting contents

should not be greater than 50 cc. This may be increased in spastic or organic obstructive states of the gastric antrum, pylorus or proximal duodenum.

b) The aspiration of food eaten 8 to 12 hours previously is likewise indicative of interference with proper gastric emptying.

c) Presence of altered blood gives a "coffee-ground" appearance and indicates the presence of a lesion which is oozing blood. The presence of bright red blood is usually due to trauma of the procedure.

2. **Degree of gastric acidity.** In our clinic we consider values in excess of 40/60 clinical units as indicative of hyperacidity, and below 20/60 clinical units, of hypoacidity. Such values are, of course, arbitrary.

a) **Hyperacidity.** Hyperacidity may be encountered in the following clinical conditions:

1) Peptic ulcer (acidity is usually lower in association with gastric than duodenal ulcer). Free hydrochloric acid must be present before an ulcer can be considered peptic in origin. The presence of free hydrochloric acid, however, does not rule out a malignant etiology.

2) In the majority of cases of chronic superficial and hypertrophic gastritis.

3) In individuals subjected to emotional disturbances, particularly ambitious, energetic persons who have heavy responsibilities, worries and anxieties. We routinely place such individuals on a peptic ulcer regimen for prophylactic purposes.

b) **Hypoacidity.** Hypoacidity may be encountered in the three forms of chronic gastritis and in some cases of gastric carcinoma.

c) **Achlorhydria.** Two types of achlorhydria are encountered, relative and absolute. By relative achlorhydria is meant the absence of secretion of free hydrochloric acid in response to a test meal but a satisfactory response to histamine. By absolute achlorhydria is meant an absence of free hydrochloric acid in response to a test meal as well as to histamine.

The incidence of achlorhydria in apparently normal individuals increases with advancing age (30 per cent at 70 years). Its existence is compatible with a healthy life. It is also encountered in 100 per cent of pernicious anemia cases, in the majority of patients with chronic atrophic gastritis (usually a large amount of gastric mucus is present in the fractions of gastric juice), in a small proportion of chronic superficial and hypertrophic gastritis cases, in gastric polyposus, and in about 60 to 70 per cent of cases of gastric carcinoma. The demonstration of an achlorhydria in association with an ulcer crater usually means that the ulcer is malignant. No procedure short of microscopic examination of the lesion should reverse such an opinion.

3. **Gastric emptying time.**

Gastric analysis and the use of a test meal may be employed to study the emptying time of the stomach. If the amount of residue remaining 2 hours after an oatmeal gruel test meal exceeds 20-30 cc., one can assume that the emptying time is prolonged. To properly use the procedure for estimating the gastric emptying time, the presence of the tip of the tube in the antrum and not in the upper end of the stomach, should be insured by fluoroscopy.

### 3. Gastric Motor Functions

The motor activities of the stomach, for practical purposes, consist of peristalsis and tonus. Both of these influence gastric emptying.

a) **Peristalsis.** Gastric motility can be studied either by recording the changes in pressure in a balloon or by roentgen fluoroscopy.

The fundus does not participate in the fluoroscopically detectable peristalsis. Peristalsis, as fluoroscopically observed, begins about the middle of the body. Proximal to the middle of the body, the motor activities are largely those of tonus. Since the distal stomach is the motor end, one should not expect drugs of the type which stimulate gastric peristalsis to evacuate a gastric remnant after a subtotal gastric resection when the stoma fails to empty properly.

The larger portion of the stomach is symptomatically "silent." All of the greater curvature, except a short portion near the pylorus where a lesion can readily produce obstruction, and much of both walls, particularly in the cardiac portion, give rise to no symptoms unless a lesion bleeds, penetrates or attains sufficient size to produce obstruction. It is in the motor portion of the stomach or at the pyloric end where mechanical obstruction may readily occur, that lesions cause derangement of motility and give rise to symptoms.

Hypermotility may be encountered in association with duodenal ulcer, in vagotonic individuals, as a result of drugs—urecholine, prostigmine, etc., and in pyloric obstruction. In the latter condition, the hyperactive peristalsis may sometimes be visible through the abdominal wall.

Hypomotility may be encountered in association with excessive sympathetic nervous system activity, following "complete" vagotomy, and after effective spasmolytic drugs.

b) **Gastric emptying**. Gastric emptying may be influenced by several factors. These include—

1. **Bulk of upper-small-intestinal content.** The more material present in the duodenum and upper small intestine, the more the emptying time is prolonged. Duodenal stasis is usually associated with delayed gastric emptying.
2. **Osmotic pressure of gastric content.** Normally hypertonic solutions remain in the stomach until they are diluted. Fifty cc. of 50 per cent glucose solution may dilute to 400 cc. before it leaves. This dilution of hypertonic solutions is a protective mechanism which prevents hypertonic solutions from entering the small intestine where they may give rise to troublesome symptoms, such as the "dumping" syndrome, diarrhea and failure to gain weight.

   Hypertonic solutions may enter the small intestine promptly from some achlorhydric stomachs, in cases of duodenal ulcer associated with hypermotility, and at times after subtotal gastric resection when the gastroenterostomy arrangement does not permit the gastric remnant to retain ingested food materials.
3. **Motility of the stomach.** All the factors which influence gastric motility also influence gastric emptying time correspondingly.
4. **Nature of material in stomach.** Water leaves almost immediately; a barium meal, 2 hours (1½ to 3 1/3 hours); a mixed meal, 3 - 4½ hours; carbohydrates leave more rapidly than proteins, which in turn leave more rapidly than fats. Delayed emptying can be one of the causes for the indigestion some people complain of after eating fatty foods. Alkaline solutions leave more rapidly than acid solutions.
5. **Organic lesions or spasm at outlet of stomach.**

### C. Influence of Drugs on Gastric Acidity

The volume of gastric juice secreted, but not its acidity, can be effectively reduced by physiologic doses of atropine or dibutoline. Parasympathomimetic drugs (urecholine, (mecholyl, etc.), alcohol and caffeine increase gastric acidity. The influence of smoking is inconstant and not agreed to by all.

### D. Objectives in the Management of Duodenal Ulcer

The local physiologic abnormalities in uncomplicated duodenal ulcer consist of: hypertonus, hypermotility and hypersecretion. In addition, there is usually present, but not always readily discoverable, psychogenic disturbances or emotional upheavals which play a large role in the development and propagation of the ulcer.

The ideal management of a duodenal ulcer patient should therefore consist of a regimen aimed at correcting the abnormalities. They include:

1. **Discover and help the patient handle**

**successfully the psychogenic motivating factors in the disease.** Before the patient is told what to eat, the physician should try to find out what is "eating" the patient. This is an individual problem which usually can be handled by the physician but occasionally the help of a psychiatrist may be necessary. Once the problem is discovered, the patient must be helped to solve it. It may require his removal from the responsible environment, a change of jobs, etc. The purpose of this aspect of handling peptic ulcer patients is to lessen the psychic or nervous secretion. If the problem cannot be discovered or handled successfully, small regular doses of a barbiturate may be very helpful.

2. **Diet.** The dietary should be bland in character. Three main meals with "interval" feedings constitute the usual regimen. The feedings should not be too large and should be frequently administered (every 1 to 2 hours) so as to prevent the stomach from becoming empty and exposing the ulcer to a bath of highly acid gastric juice. In some instances, especially those with night pain, the feedings may have to be administered around the clock.

The feedings should contain, when practical, a fair proportion of fat so as to take advantage of its depressant effect on gastric secretion as well as motility. They should be free of foods (meat extracts, etc.) which stimulate hydrochloric acid secretion.

3. **Antacids** are not necessary in the majority of cases. They can be used, in lieu of interval feedings, when it is not desirable to include a high proportion of fat in the diet from the standpoint of patient's gaining too much weight, in patients with hypercholesterolemia, and at bedtime in individuals having night pain. When an antacid is used, it should be insoluble, cause neither constipation, diarrhea or an acid rebound.

4. **Belladonna drugs** are not necessary in the average case. They may be used in physiologic doses in individuals with persistent pain due to penetration, and at bedtime in those having night pain.

5. **Alcohol and coffee** are restricted because they increase gastric acidity.

6. **Smoking.** I, personally, do not prohibit smoking unless there is clear-cut relationship between the smoking of a cigarette and the precipitation of pain. I have never yet seen a peptic ulcer fail to heal because the patient smoked; usually other reasons were present. Prohibition of smoking makes some individuals more nervous.

### E. Effect of Vagotomy on Gastric Motor Function

The changes in gastric motor physiology which follow a "complete" vagotomy include: a decrease in tonus, abolition of peristalsis and gastric retention. The gastric retention is often troublesome. The effect of vagotomy on the pylorus is not settled. Theoretically it should be in spasm but time and further observation may demonstrate that it is not.

Gastric peristalsis and emptying can be temporarily restored by urecholine administered subcutaneously or orally before each of the main meals of the day (3). The usual dose of parenteral urecholine is from 5 to 10 mg.; while the effective oral dose has to be determined and may be as large as 50 mg.

### Summary

An attempt has been made to point out some of the practical applications of the physiologic functions of the stomach as well as to indicate when such functions are disturbed by pathologic lesions and various surgical procedures performed on the stomach.

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## PATHOLOGICAL ASPECTS

William E. Ehrich, M. D., *
Philadelphia, Pa.

I should first like to say a few words about the pathology of *gastritis*.

Our study of this disease was greatly handicapped in the past by the fact that the peptic chyme of the stomach has a strong digestive effect. This situation changed only when the gastroscope was introduced permitting direct inspection and biopsy of the living mucosa. If we compare the x-ray and gastroscopic diagnoses made during the war in 200 dispeptic soldiers in the British army, we can see that the gastroscopic method was 18 times as efficient as the roentgenological one in gastritis, and twice so, in gastric ulcer. We don't have enough material yet for a new appraisal of the pathology of this disease.

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Gastritis may be divided into acute and chronic gastritis. Once in a while we see a patient who has a so-called phlegmon of the stomach. This is a spreading infection caused by staphylococci or streptococci. Occasionally we encounter a gastritis caused by corrosive poisons, and here and there we see a case of hemorrhagic gastritis due to toxic infectious diseases such as diphtheria or influenza. The bleeding from the stomach in hemorrhage gastritis is apparently due to a local disturbance in the mucosa because there may be no change in the coagulation mechanism of the blood.

Chronic gastritis is usually divided into a hypertrophic and atrophic type. On the Continent and in England, they are known also as ulcer gastritis and cancer gastritis. Hypertrophic or ulcer gastritis is characterized by thickening of the mucosa due to hyperplasia of the glands and the presence of edema and abundant plasma cells and other leucocytes. It is seen chiefly in the pyloric region of the stomach. Hypertrophic gastritis is called ulcer gastritis, because it is the type which is so frequently associated with ulcer. It is the soil in which ulcer develops. It is important to remember that ulcer gastritis may show the symptomology of ulcer without an ulcer being present. For doubtful cases, gastroscopic examination may be helpful.

The other chronic gastritis, atrophic gastritis, is often seen with cancer. However, there are cancers which are not associated with atrophic gastritis, as was pointed out by the previous speaker. The relationship between atrophic gastritis and cancer is not clear. There are some who believe that this gastritis is a soil which predisposes to cancer. However, Dr. Stewart of the Memorial Hospital, who has made an excellent study of the connection between the two, found that after 40 atrophic gastritis is almost as common in patients without cancer as in those that have cancer. He found no evidence that the atrophic gastritis is a pre-cancerous condition.

Let us turn now to the pathology of *gastric ulcer*. As in gastritis, we distinguish acute and chronic types. There are the acute so-called hemorrhagic erosions of the mucosa—due to injury of the stomach by chemical or physical forces or due to blood dyscrasias. These ulcerations usually heal very promptly, although occasionally they go on to more severe lesions.

More interesting than the erosions are the so-called acute ulcers. Typical examples are Curling's ulcers in severe burns. You may remember the Cocoanut Grove fire in Boston where half of the patients had clinical evidence of Curling's ulcers. Pathological studies of these ulcers have shown that in a majority of cases they are located in the duodenum. Only 17% were found in the stomach alone.

The nature of acute ulcers is well explained by the alarm reaction of Dr. Selye. It has been shown that many alarm-reacting stimuli may produce acute ulcers in stomach and duodenum. In fact, it seems likely that the majority of the acute ulcers of the stomach are caused by this reaction.

How the alarm reaction produces ulcers, is not clear. It is known that it destroys lymphoid cells, the excretory cells of the pancreas and of the salivary glands, and others. It destroys cells that are rich in nucleic acids, particularly pentosenucleic acid, and this may be one of the reasons why the mucosa of the stomach is affected also.

In contrast to the acute ulcers, chronic peptic ulcers are usually solitary. According to recent statistics multiplicity occurs in not more than 18% of the cases. Clinicians usually claim that most peptic ulcers are located in the duodenum, whereas the pathologists state that gastric ulcer is more common than duodenal ulcer. A study at the Philadelphia General Hospital of 30,000 autopsies revealed a total of 548 ulcers. Duodenal ulcers were 4 times as frequent as gastric ulcers.

In the textbooks of pathology one can also see that males are ten times as frequently affected as females. In our material, males were only twice as often affected as females.

May be that the figures seen in textbooks were carried over from previous decades or even the last century. If so, we may assume that a change has taken place in the incidence and occurrence of peptic ulcer.

It is interesting that no difference in incidence of peptic ulcers was found between the colored and the white population. This observation is contrary to present beliefs.

The cause of peptic ulcer shall not be discussed here. Hyperacidity which is often blamed as being the primary cause, is apparently merely a sustaining factor, for it doesn't explain, for instance, why these ulcers occur chiefly on the lesser curvature, other portions of the stomach being equally exposed to the chyme. However, from the practical point of view, hyperacidity remains an important factor, because it has to be eliminated if gastric ulcer is to heal.

Now a few words about the question of *ulcer-carcinoma*. You may remember that McCarthy and Broders in 1914 claimed that two-thirds of all ulcers became carcinoma. The paper was only three pages long and it had 38 illustrations. The latter showed peptic ulcers with glandular proliferations at their borders which were interpreted as pre-cancerous lesions. Subsequent studies have shown that this interpretation was erroneous. It was pointed out, for instance, that ulcer of the stomach occurs chiefly in the lesser curvature whereas carcinoma is seen chiefly in region of the pylorus and pre-pylorus. The difference in distribution becomes even clearer when we consider that duodenal ulcers are more common than gastric ulcers, while duodenal carcinoma in the position where duodenal ulcers occur is exceedingly rare.

There seems to be no relationship between these two conditions, and yet occasionally we see an ulcer which is carcinomatous. Are these true ulcer-carcinomas? The pathologists who have studied these lesions particularly the Boston and the New York group of pathologists — all agree fairly well that they are not primary ulcers which turned into carcinoma, but that they are mostly carcinomas which underwent ulceration. Carcinoma consists of abnormal epithelial cells which may be more vulnerable to the peptic chyme than normal epithelium, which may well explain secondary ulceration of carcinoma.

It was pointed out by the previous speaker that carcinoma in a good many cases, may be in 10 per cent of the cases, gives a typical history and the functional disturbances of peptic ulcer rather than of carcinoma. This may be another reason for the idea that peptic ulcer may be a precancerous condition.

There are other lesions in the stomach which must be considered in relation with carcinoma. The most important of these are the *polyps of the stomach*. These are observed in about 2 per cent of all gastroscopies. Most polyps are solitary, but occasionally they are multiple and fill the whole interior of the stomach.

What is the relationship between polyps and carcinoma in the gastro-intestinal tract? Most observers believe that adenomatous polyps and carcinomas are closely related, that is to say, that the polyps which are made up of proliferating epithelium are precancerous. However, there seems to be a difference in degree of the precancerous state. The deeper in the intestinal tract, the more precancerous.

The superficial layers of a polyp frequently show anaplastic changes which are interpreted as cancer in situ. It should be clear that these don't require drastic measures as long as there is no invasion. It should also be clear that the anaplastic cells are easily picked up in a Papanicolai smear and thus could lead to an erroneous diagnosis.

Among the less common tumors of the stomach *myoma* is perhaps the most noteworthy. It behaves much like leiomyomas elsewhere. It is usually benign, but once in a while undergoes malignancy to become a myosarcoma. Fortunately, this happens rarely. I have seen only one such case, and that was referred to us from elsewhere.

Other benign tumors include *lipomas, hemangiomas* and *neurofibromas,* all of which are rare.

Finally, if should be mentioned that the stomach may be seat of *lymphoblastomas,* i. e., reticulum cell sarcoma and Hodgkin's disease. In fact, lymphoblastoma is the most common of the gastric malignancies of non-epithelial origin. The literature contains over 500 such cases, and it is estimated that they occur once in a hundred carcinomas.

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## RADIOLOGICAL ASPECTS

Philip J. Hodes, M. D., *
Philadelphia, Pa.

(Ed. Note — Dr. Hodes presented the x-ray diagnosis of many gastric lesions and discussed their differential diagnosis. The Journal regrets its inability to publish these excellent pictures.)

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## SURGICAL ASPECTS**

Jonathan E. Rhoads, M. D., ***
Philadelphia, Pa.

The surgeon has too long thought of gastric lesions as either peptic ulcers or carcinoma. Other lesions of the stomach occur and deserve careful consideration in diagnosis and in making decisions about treatment. The presentations of Dr. Machella, Dr. Ehrich and Dr. Hodes have emphasized this. I would like to discuss one phase of the diagnostic problem, the use of the electrogastrogram, and then proceed to a consideration of the indications for surgery and of what surgery has to offer for patients with gastric lesions.

The electrogastrogram is essentially a record of the voltage developed by the gastric mucosa during the period of observation. An essential feature of the test is the administration of a milk meal and observations on the electrical response to this meal. The background of the test is a long series of physiological experiments on the electrical energy developed in the stomach beginning about six decades ago. The application of this information to the diagnosis of cancer was made by Dr. Edmund Goodman (1) who published a preliminary study in 1942.

The test is done on a fasting stomach. The gastric electrode consists of an ordinary Levine tube, the end of which has been cut off and filled with a little rubber sponge. The tube and sponge are filled with 0.10 normal hydrochloric acid and the tube is placed so that the end of it lies against the gastric mucosa opposite the esophageal opening. (Fig. 1). Preferably, its position should be checked fluoroscopically. The electrodes are connected to the apparatus and a base line obtained for a period of fifteen minutes.

Irregularity of the base line indicates gastric pathology. In our experience, the falling base line makes it difficult, if not impossible, to interpret the record. However, if the base line does not fall too much, the patient is given 200 cc. of milk to drink at the end of fifteen minutes and the response observed. Normally, the response begins within one minute and there is an increase in the negative voltage in the stomach of more

FIG. 1

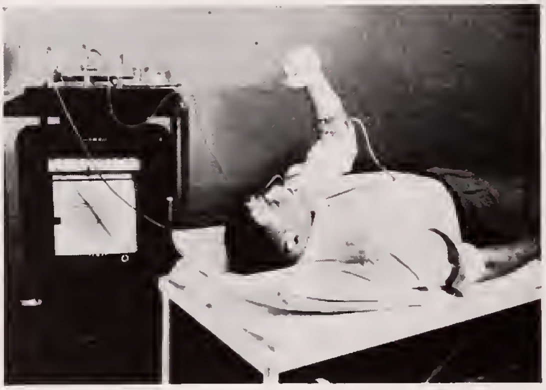
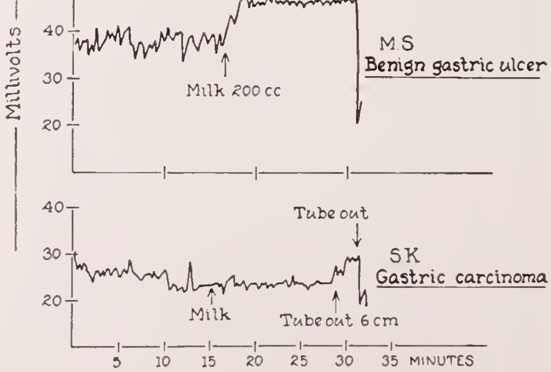


FIG. 2
TYPICAL ELECTROGASTROGRAMS.



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than three millivolts and more than three minutes elapse before the electrical potential returns to the preceding level. Typical responses are shown in Fig. 2. The method, as I have described it, is a modification of that devised by Goodman and was developed by Dr. Philip Sawyer (2) at the University of Pennsylvania.

Sawyer carried out the test in 106 patients, in addition to twenty normal controls. Normal readings were obtained in all of the controls. In the group of 106 patients, it was necessary to discard the tracings as uninterpretable in nine or 8.5 per cent. Thirty of the remaining patients came to operation and were proved to have carcinoma. The test was correct in 87 per cent of these thirty patients. The remaining 67 patients, either came to operation and were demonstrated to have benign lesions, or were concluded to have benign lesions on the basis of other observations and on the basis of their subsequent course. The test was correct in 88 per cent of the patients who did not have malignant disease. It, therefore, is not to be relied upon for the positive diagnosis of cancer of the stomach, but it may be of value as a screening test and when positive, thorough study of the patient is indicated.

The great problem confronting clinicians, when a gastric ulcer is demonstrated, is to decide whether it is malignant. The distribution of the benign and malignant gastric ulcers is not sufficiently different to provide a satisfactory basis upon which to make this decision. In the past, it has been customary to accept the roentgenological interpretation at once when malignancy is strongly suspected and, otherwise, to try the patient on medical treatment and only to resort to surgery if the ulcer failed to heal. There is, in my mind, serious doubt whether this procedure may not have been an important contributory factor to the dismal results of the surgery of cancer of the stomach. It is seldom that the roentgenologist can say with certainty that a small gastric ulcer is malignant. It is, therefore, the large gastric carcinomas that are operated upon promptly, and the smaller the gastric carcinoma, the more likely is there to be a delay. We all know that the end results of gastric carcinoma are miserable. Five per cent is a good cross sectional figure for five year cures and, it has often been said, that the number of surgeons who have had as many as one five year cure of gastric cancer after gastric resection would comprise a comparatively small group. Were there no five year cures, one might be tempted to take the point of view that the effort was useless and that these patients should be abandoned to their fate. The splendid response of a few of them, however, has made it seem well worthwhile to go to an extensive effort in behalf of patients with gastric neoplasms.

In the past, gastrectomy has been a rather formidable procedure. While the operation is still a fairly long one, current mortality figures indicate that it is no more formidable than was gallbladder surgery a few years ago. The extent to which the mortality of this operation has fallen is not widely appreciated.

It has been the general experience that the mortality is much higher when carcinoma is present than when the operation has been done in benign conditions. The Lahey Clinic (3) has reported a series of over 110 gastrectomies for benign gastric ulcers without a single mortality, and it is our opinion that the mortality in this group of cases can probably be held down to about one per cent. In those patients with cancer, however, the results of the past have been considerably worse. Abrahamson and Hinton (4) reported a group of 139 patients with gastric carcinoma admitted to the Fourth Division of the Bellevue Hospital in New York, between the years 1939 and 1945. Only 19 of these patients had gastric resection and of the 19 only seven survived their hospital experience. As recently as 1944, Pack (5) stated that the mortality for operation for gastric cancer is probably of the order of 8 to 12 per cent. Tables I, II, and III show

TABLE I

**GASTRIC CARCINOMA**

**General Surgical Service**

**Hospital of the University of Pennsylvania**

**Jan. 1, 1945 to Oct. 1, 1949**

| | |
|---|---|
| Total Cases Admitted | 236 |
| Total Cases Explored | 210 |
| Explored but not Resected | 88 |
| Resected | 122 |
| Resectability Rate | 52% |

TABLE II

**GASTRIC CARCINOMA**

**General Surgical Service**

**Hospital of the University of Pennsylvania**

**Jan. 1, 1945 to Oct. 1, 1949**

| | Number | Hospital Mortality % | Operative Mortality % |
|---|---|---|---|
| All Cases Admitted | 236 | | |
| Not Operated Upon | 26 | 40.7 | |
| Operated Upon but not Resected | 88 | 4.5 | 7.9 |

TABLE III

**GASTRIC CARCINOMA**

**General Surgical Service**

**Hospital of the University of Pennsylvania**

**Jan. 1, 1945 to Oct. 1, 1949**

| | | Number | Operative* Mortality % |
|---|---|---|---|
| All Cases Resected | | 122 | 3.2 |
| Subtotal Gastrectomy | | 106 | 2.8 |
| transabdominal | | 92 | 2.0 |
| transthoracic | | 14 | 7.1 |
| Total Gastrectomy | 16 | 16 | 6.3 |

*Operative mortality is defined as all deaths occurring in the hospital within 30 days of operation regardless of etiology.

the experience at the Hospital of the University of Pennsylvania in a very recent series. There were 236 patients with gastric cancer admitted to the surgical service between 1945 and October 1, 1949. Of this group, all but 26 were operated upon and 52 per cent of the total had some type of gastric resection. Among the 106 cases who had subtotal resections, there were three postoperative deaths, with a mortality of 2.8 per cent.

In total gastrectomy, the mortality experience across the country is higher. In the earlier series it ran about 30 per cent, in the more recent series 16 per cent, and in the last compilation of the cases done by Longmire (6), there was but a single death in a series of 30 patients. The experience at the Hospital of the University of Pennsylvania with total gastrectomy, between 1945 and October 1, 1949, was 16 cases and one death.

Undoubtedly, as the operability and resectability rates go up, we may find that the five year cure rate among those operated upon may be lower than in series in which only the favorable cases are operated upon, however, there is reason to hope that the total salvage will be increased. Furthermore, a number of the patients not cured may have, nevertheless, been made considerably more comfortable and have had some prolongation of life.

The usual operation for gastric carcinoma in our clinic now begins with the great omentum, which is carefully dissected from the transverse colon so that it is removed in continuity with the gastro-colic omentum, the stomach itself, and the gastro-hepatic omentum. The latter is divided very close to its hepatic attachment. In most cases, about one and a half to two centimeters of the duodenum is removed. The spleen and pancreas are left behind and about a four-fifths resection of the stomach done, providing that this gives a good margin of normal gastric wall above the tumor. The left gastric artery is usually divided close to its separation from the celiac axis so that the lymph nodes around this vessel and others in the omenta are entirely removed.

For subtotal resection, continuity is generally restored by the Hofmeister modification of the Polya operation. This permits removal of the entire lesser curvature up to the esophagus but leaves a reasonably good sized pouch of stomach and yet one small enough to minimize the probability of a stomal ulcer. If the lesion is situated higher up, the transthoracic approach is often useful, the ninth rib is resected and the thorax opened through its bed. The diaphragm is then opened from the esophageal hiatus laterally, and the stomach approached from above. In this way, it is possible to remove the lower portion of the esophagus and as much of the stomach as is desired. If a sufficient gastric pouch remains, the end of the esophagus is anastomosed to the anterior wall of the stomach after the cut end of the stomach has been closed. If all of the stomach is to be removed, the duodenal stump is ordinarily closed and dropped back and the esophageal anastomosis is carried out to the jejunum. It is generally considered that a side-to-side anastomosis between the limbs of the jejunal loop reduces the tendency toward the eructation of bile and results in a more comfortable patient. Dr. Aylwin (7), of Leeds, England, uses a Y type of loop in this anastomosis but prefers the abdominal approach extending this into the thorax by cutting across the costal margin whenever necessary. One of the advantages of entering the thorax is that it permits excision of the diaphragm about the esophageal hiatus. A ring of lymph nodes is apt to be present both below and above the diaphragm and the extirpation of these nodes may get rid of a locus of carcinoma.

The lymph nodes about the stomach are very numerous. In one of the specimens which we resected two years ago, Dr. Nicholas Gimbel was successful in dissecting free 99 lymph nodes. Of these, only seven were involved with the metastatic carcinoma, in spite of the fact that the primary lesion was quite large. It is obvious, therefore, that frozen section of a lymph node should not be depended upon to differentiate between benign and malignant lesions at the time of operation. A positive result is, of course, convincing but a negative result would not mean that carcinoma was not present.

As Brunschwig (8) has shown, one need not always be stopped by invasion of adjacent organs by carcinoma. It is possible to remove most of the left lobe of the liver, much of the pancreas, the spleen, along with the stomach, when these adjacent structures are involved. The utility of such procedures is at times in doubt. However, in the first 100 cases of radical surgery of this type which Brunschwig reported, 13 per cent survived five years. Many of these, of course, were lesions that were not primary in the stomach. In spite of the high mortality, such figures indicate that it is probably worthwhile to be radical in the extirpation of some large carcinomas. While, in some situations, we hold with the maxim "do a small operation for a big cancer and a big operation for a small cancer," nevertheless, in carcinoma of the stomach, one from time to time encounters a large lesion which has grown slowly and has produced symptoms late. When such lesions are removed, one is sometimes surprised to have the patient do unexpectedly well. This is probably because the more actively growing lesions tend to produce symptoms earlier and, the fact that a lesion has grown to a large size before producing symptoms, may mean that it is slower in its growth characteristics and less malignant in its behavior than average.

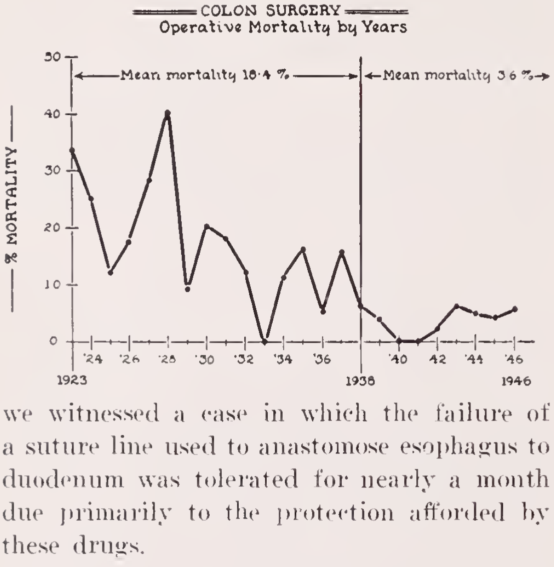
As yet, no post war figures for the five year survival rate after resection of carcinoma of the stomach are possible. While the survival rate will undoubtedly remain low, we do anticipate that the overall salvage will have improved somewhat from the earlier figures.

What then is to be recommended to the patient with a gastric lesion from the surgical standpoint? 1. If the patient has only a gastritis, medical treatment is in order with close x-ray observation. 2. If the patient has gastric polyposis, the polyp should be removed as there is a tendency toward the development of malignancy in such polyps. 3. If a lesion of the stomach is bizarre, it should, in general, be explored and in most circumstances be resected. Such lesions include leiomyomas and leiomysarcomas and certain granulomas, all of which have a more favorable prognosis on the average than do carcinomas in this location. 4. If the patient has gastric ulcer and is a reasonably good surgical risk, it is my belief that he should be advised to be operated on and have the lesion resected. The surgical results, if the lesion is benign, are good both from the standpoint of mortality and the standpoint of symptomatic relief. According to some series, there is about a nine per cent chance that the lesion will prove to be malignant. No one can say, in the life history of a particular cancer, whether a three week or a six week period of observation will be important or not as judged by its spread. Certainly, in some three week period, cancer of the stomach must traverse the line between the point at which it can all be resected and the point at which it cannot all be resected. I believe it is time to take a more radical point of view with regard to gastric ulcer and to see, if in this way, we cannot improve the results in cancer of the stomach during the next decade.

Perhaps the most striking advance in the therapy of gastric cancer has been the improvement in operative mortality. While five year survival rather than operative mortality is the principal measure of the success of cancer therapy, the reduction in operative mortality is nevertheless important. A high immediate mortality is always a serious obstacle and the reduction will logically lead to a greater freedom in recommending operation in early or doubtful cases and greater freedom for the surgeon in extending the perimeter of his dissection.

The reasons for the reduction in operative mortality are usually listed as transfusion, antibiotics, and better technique. We believe that the influence of chemotherapeutic agents, including the antibiotics, has been very great in all operations on the alimentary tract. Fig. 3 shows the effect of these agents upon the mortality after large bowel operations where the risk of peritonitis has always been greater than after the gastric operations. Recently we witnessed a case in which the failure of a suture line used to anastomose esophagus to duodenum was tolerated for nearly a month due primarily to the protection afforded by these drugs.

FIG. 3



Transfusions are by no means new in gastric surgery but, we believe, that the patient has benefited by a more quantitative use of blood and plasma substitutes. Determination of blood volume by the dye method has given us some very useful data in patients with gastric lesions. Table IV shows a consecutive series of such determinations and the average deficit in patients before operation is nearly 1000 cubic centimeters.

TABLE IV
**PREOPERATIVE PLASMA VOLUME DETERMINATIONS IN A GROUP OF PATIENTS WITH GASTRIC LESIONS (9)**

**General Surgical Service**
**Hospital of the University of Pennsylvania**

| Name | Predicted Plasma Volume (ml) | Measured Plasma Volume (ml) | Plasma Deficit (ml) | Hematocrit (% cells) | Whole Blood Deficit (ml) |
|---|---|---|---|---|---|
| M. L. | 2,800 | 2,260 | 540 | 46 | 980 |
| M. R. | 3,000 | 2,520 | 480 | 48 | 875 |
| R. Z. | 2,700 | 2.175 | 525 | 42 | 955 |
| A. B. | 3,500 | 2,665 | 835 | 42 | 1,680 |
| J. S. | 3,850 | 2,265 | 1,585 | 44 | 2,870 |
| A. P. | 4,500 | 3,600 | 900 | 45 | 1,560 |
| F. L. | 3,370 | 2,800 | 570 | 39 | 930 |
| J. C. | 3,290 | 2,840 | 450 | 38 | 730 |
| S. diV. | 3,530 | 3,170 | 360 | 44 | 630 |
| N. H. | 4,050 | 3,490 | 560 | 36 | 1,890 |

There have also been improvements in the management of fluid therapy. The importance of potassium loss is now generally recognized. If the urinary volume is satisfactory, six grams of potassium chloride in a liter of half strength physiological saline may be given slowly by vein once a day, if necessary, to correct a low serum potassium level.

## SUMMARY

The electrogastrogram as a diagnostic technique for the detection of gastric cancer is discussed. It appears to have a field of usefulness as a screening test but cannot be relied upon for definite diagnosis in the individual patient.

A brief review of recent advances in gastric surgery has been presented chiefly with reference to the problem of gastric malignancy. A substantial reduction in the operative mortality for gastric resection is reported in a series beginning in 1945. The operability rate and resectability rates have increased. The effect of these advances on the five year survival rate cannot as yet be adequately estimated but it seems certain that earlier operation remains the chief hope of improvement.

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## DISCUSSION

DR. I. L. CHIPMAN, JR. (Wilmington): You have heard this afternoon a big problem which clinicians presented from four different aspects. The biggest to us, perhaps, as individual practitioners, is gastric carcinoma.

The problem does not begin with the radiologist, nor does it begin with the surgeon. It begins with the clinician in his office, who sees the patient for the first time. Consequently, early diagnosis is paramount, as we all recognize, in this disease, and to follow this a high index of suspicion by the individual physician is very important. Unless we have it we are of no help whatsoever to our allied specialists.

Unfortunately, as has been pointed out, many of these patients have symptoms for anywhere from four months to a year and sometimes longer before they seek aid. And again, unfortunately, it is still true that too many cancers have extended beyond the confines of the stomach for us to be of any value to them.

So whenever we receive a patient in our office who complains of vague epigastric distress, or possibly colonic symptoms simulating the irritable colon syndrome, or a pepticolic diathesis, if we aren't sure, positively sure, let us get our first known help — the gastrointestinal study. Today, in all fields, our attention is directed to working out programs and devices for early diagnosis of this disease.

The recognition of the value of periodic physical examinations, with gastrointestinal study, is invaluable. However, it has its limitation, to be sure. Photo-fluorographic means, screening tests which have been done and are being done in various clinics throughout the country at the present time, are in the process of being formulated. I would like to ask Dr. Hodes if he would comment on that phase of the problem and what his feeling is.

We are fortunate when we have a patient operated upon sometimes to luckily pick up an early gastric neoplasm, and sometimes when we are having an examination of the gastrointestinal tract by way of x-ray, then, too, unsuspectedly, we may find a gastric neoplasm.

You have heard from these four gentlemen a very, very healthy attitude, which I think more of us are taking as the days go along.

The use of repeated x-rays, examination of the smear technique by the papanicplau or other techniques, gastroscopy, and Dr. Rhoads' electrogastrogram are all important. They are not the answer. The answer lies still, at the present time, with us. Part of the answer is in getting to the patient a little earlier, until we know more about the etiological causes and physiologic aspects of gastric carcinoma.

Dr. D. M. Gay (Wilmington): The prevalence and seriousness of diseases of the stomach make the subject of this afternoon's symposium a most important one. To a general pathologist, the usual clinical laboratory procedures applied to the patient with gastric symptoms appear to serve in most cases, only to confirm what the internist is already quite sure of except in the case of cancer. In cancer, likewise, the usual laboratory tests are of little use and the tissue which is eventually submitted to the pathologist for examination commonly reveals a discouragingly extensive lesion. There are very few tissue specimens in which the cancer is so small that there is confusion with benign ulcer even on gross appearance. The statement that a gastric ulcer no bigger than a dime is probably benign and one bigger than a quarter is probably cancer is true only because we do not see early gastric cancer.

Dr. Ehrich has indicated a new means by which we may be able to make earlier diagnosis. The pathological physiology of gastric lesions should theoretically aid in the interpretation of gastric smears. The hyperchlorhydria of gastric ulcer should remove from the microscopic scene the mass of dead cell debris that often clutters up cervical smears and, thus, present a more striking contrast to smears from carcinomatous stomachs in which the acid content is low or absent. In spite of this, the interpretation of smears is difficult.

To obtain the smears, gastroscopy must be performed. Why not then, having brought the lesion into view where it may be touched, go one step further and obtain an actual biopsy specimen which should enable the pathologist to make a diagnosis for greater accuracy.

The papers indicate with record to gastric lesions, that the physician should develop and entertain a high degree of suspicion of cancer.

Dr. W. W. Lattomus (Wilmington): I wish to express my profound thanks to these gentlemen who came from the University of

Pennsylvania to give us this splendid symposium on the stomach.

The subject has been so thoroughly covered that I feel there is very little that I can add. However, I would like to ask two questions of Dr. Hodes. The first is: what is his feeling about base line studies following subtotal gastrectomy? The reason I ask that is that we are finding many recurrent ulcers and it is very difficult for us to tell whether the abnormalities outlined are the results of the operating procedure or of ulcers.

And the other is: how does he distinguish between an extensive carcinoma and these whole penetrating ulcers?

Dr. Robert A. Mino (Wilmington): We are greatly indebted to the group from the University of Pennsylvania for this Symposium on Benign and Malignant Lesions of the Stomach. They are to be complimented on their excellent presentation of this vast subject. Since time does not permit a comprehensive discussion of this entire subject, I shall confine my remarks to the most important lesion of the stomach, that is, gastric cancer.

Approximately 40,000 deaths per year occur in the U. S. from cancer of the stomach, and approximately 1/3 of all cancer deaths are due to this disease. No age group is immune to this disease, since about 1.5% to 2.8% of gastric cancer occurs under the age of thirty years.

The present salvage rate for this disease is 5-6%. This sounds like an extremely deplorable situation, and yet the pessimistic attitude held by many physicians, and not a few surgeons, of a hopeless outlook, does not seem to be entirely justified.

What have been the improvements in the definitive treatment of gastric cancer? There have been remarkable strides in the surgical therapy of this disease. In 1932, only 13% of the total patients seen at the Presbyterian Hospital in N. Y. were resectable, and the mortality rate from resection was 25-30% In 1947, 40-60% of the patients reported from various centers were resectable. The mortality rate from resection varied from 10-12%. This includes the 10-15% of cases confined to the cardia of the stomach, or cardio-esophageal region, which were formerly classified as inoperable due to technical difficulties. A number of these more recent cases have been subjected to a type of resection of a more major character, through either the transthoracic, abdominal or abdomino-thoracic approach. In this group of cases, there have been a greater number of poor risk patients subjected to a more radical operation; yet the mortality from operation has decreased to a comparatively small figure.

The factors responsible for reduction of operative mortality have previously been discussed this afternoon, and will not again be enumerated. Suffice it to say that resection for gastric cancer has become a relatively safe procedure, yet the increase in salvage has not been very great in the last twenty years. Probably no appreciable reduction of operative mortality can be expected to occur in the future.

Dr. Rhoads has previously quoted the low operative mortality for resection in recent cases at the University of Pennsylvania. Although the number of cases is smaller than usually found in a teaching institution, the mortality figures from the Memorial Hospital, Wilmington, shows what can be accomplished in well organized, smaller institutions. The mortality rate in this hospital, of *gastric resections* for *gastric cancer*, since 1944 to the present date, is 11%. (No deaths have occurred since 1945, when resection was performed for a gastric ulcer.) This low mortality has been achieved, despite the fact that the operations have been of a greater magnitude and include radical resections of the stomach and adjacent involved viscera, by either the abominal or abdomino-thoracic approach. In addition, older patients, from 70 to 82 years of age, have had surgery. These resections were performed by me and other members of the Surgical Staff, including the Senior Surgical Resident.

It can be seen that surgery has become relatively safe for the patient. Yet too many patients still present themselves for admission to the hospital at a stage in which their disease is incurable. The great problem is, therefore, to see these patients at a time when the lesion is still surgically curable. The responsibility for late diagnosis rests both with the patient, and with the physician first consulted. Since Gastric cancer has a very insidious onset, many patients pay little attention to the initial warning signals and delay until symptoms become pronounced, before seeking medical aid; since these symptoms are initially so mild and vague, the physician is also prone to regard them as trivial and thus delay the diagnosis. This delay in early diagnosis can be corrected only by education of the public and an attitude or awareness by the physician that gastric cancer should be considered in any patient presenting recently developed symptoms referable to the upper G. I. Tract, unexplained weakness, unexplained tiredness, or anemia.

Since the increase in cures must depend on earlier diagnosis, some simple test to detect the presence of cancer would greatly improve the end results. Electrogastrography, as described by Dr. Rhoads, may prove to be useful as a mass screening test aiding earlier diagnosis.

At present there is one group of patients in which earlier diagnosis and, therefore increased salvage may be expected. It is well known that in approximately 15% of patients with a typical history, and gastroscopic and x-ray findings, of a benign gastric ulcer, the operative specimen will show microscopically an unsuspected gastric cancer. Since gastric resection for ulcer has a low mortality, and since the majority of these patients show such satisfactory course after resection, there is no justification for continued conservative medical management, unless prompt, symptomatic relief and x-ray evidence of healing are obtained, and frequent periodic x-ray examinations show that the ulcer has remained healed. Failure to operate on these patients, whose ulcers do not heal or remain healed, means that 15% will be denied the chance for cure of an unsuspected gastric cancer. At the Memorial Hospital there have been no deaths following resection for gastric ulcer from 1945 to the present date. In general, medical treatment for gastric ulcer is rather unsatisfactory. Approximately 60% of the patients will eventually require surgery, either due to intractibility, perforation, bleeding, obstruction, or cancer. Some will die of massive hemorrhage, peritonitis, and during operation performed to control massive hemorrhage. Others will come to operation in poor condition from starvation, due to pyloric obstruction. Operations performed under such circumstances will result in a significant number of deaths, which cannot be prevented.

In view of the above facts I should like to make a plea that chronic gastric ulcer be considered primarily a surgical disease. Chronic gastric ulcer means any lesion which fails to heal, or remain healed, after three weeks of adequate therapy, preferably in the hospital. Early operation in this group of patients should result in the discovery and early removal of a significant number of unsuspected gastric cancers.

Although cures will still remain relatively low, the pessimistic attitude toward gastric cancer should be abandoned. Some can be cured, and many of the incurable cases can be offered excellent palliation by gastric resection. The average survival of untreated cases after diagnosis is six to eight months; following resection, even in the presence of incurable extension of the disease, the patient's symptoms are relieved, he is rehabilitated, and the average survival time is twenty-two to twenty-four months.

Although the present end-results leave a lot to be desired, it is the moral responsibility of the physician to see that all patients receive adequate treatment as soon as the diagnosis is made. If the diagnosis between the benign and malignant lesion cannot definitely be made a more liberal attitude by the physician for earlier operation is mandatory, if improvements in our present deplorable results are to be achieved.

Dr. Machella: Dr. Benedict of Boston has been using a gastroscope with a forceps built into it. This instrument makes possible the removal of bits of tissue from the stomach for microscopic examination. The use of this ''operating'' gastroscope promises to be a big help to us in the diagnosis of intragastric lesions.

Dr. Ehrich: I should like to stress the value of biopsies, either through direct exploration or, better, through the gastroscope. Only when we have representation material for microscopic study, are we in a position to prove a diagnosis.

DR. HODES: First, let me thank the discussants for their very kind remarks, and answer the specific questions.

Dr. Chipman's question concerns gastric surveys similar to the chest surveys. The American College of Radiology and its associate societies went into that very thoroughly, and we are still working on it. The evidence seems to suggest that the job is far too massive for any group of radiologists to undertake. It has been estimated that if all the stomachs of individuals over 40 years of age—theoretically, the cancer-bearing group — were to be examined in a survey method, it would take every radiologist in the United States, doing nothing but gastrointestinal work, which would leave him time for nothing else. And then, what would have happened with that 35-year-old friend of mine, who was a woman, who would have missed the survey?

Pilot studies are going on at the present time at Johns Hopkins and at Jefferson in Philadelphia, and so far they have not been very productive. They are still being worked on, though.

With reference to Dr. Lattomus' questions, one question I can answer and the other I can't.

First, the question about the postoperative stomach. We routinely or try to routinely study all patients after they have had either gastric resection or intestinal resection, or colonic resection. We do that sometimes while the patient is in the hospital, or sometimes six weeks or two months later. Dr. Rhoads probably will be able to tell you more about that. We do that in order to find the base line, so that later when symptoms develop, we know where we stand.

As to the other question, extensive carcinoma of the pyloric region against ulcer, I can't tell you that. I can tell you this, though, that if the patient has an active associated duodenal ulcer, I am not at all afraid to say I think the gastric ulcer is benign.

I am in the fortunate position of having associates like Dr. MacLella to help me, and, if he wants, have Dr. Rhoads operate on them. His mortality is so low that that responsibility doesn't have to be mine any longer.

One more point—what am I going to do if I get a questionable lesion? That is probably the way to boil it down—what am I, as a radiologist, going to do if somebody says: "Well, now, you may have here this gastritis, or maybe it is an ulcer?"

Well, I know this: that I am not going to allow another radiologist to have the last say. He is not the one who is going to tell me that this is or is not a benign ulcer. Dr. MacLella is going to work with me, and he is going to work hard. We are going to have our entire gastric team work. The chances are I will go to Dr. Rhoads and he will take the lesion out, and I hope Dr. Ehrich says it is benign.

DR. JONATHAN E. RHOADS: I hope Dr. Hodes did not leave you with the impression that patients who have gastric resections for benign lesions generally become gastric cripples. Some of them used to, but Dr. Machella has been able to prevent this in most of them with a suitable dietary regime, which helps to avoid the dumping syndrome, so that we feel that if operation is done at the present time for benign gastric ulcer a good result is to be expected. I wish to thank the discussors, and I would like to join Dr. Gay in his plea for the early referral of patients with gastric lesions for surgery when such lesions are not clearly benign.

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BCG vaccine has joined the conventional forms of tberculosis control in Alaska. With a tuberculosis mortality rate nine times that of the United States, the last outpost of America is mustering every known weapon in its fight against tuberculosis Elaine Schwinge, M.D., Nat. Tuberc. A. Bull., May, 1949.

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Tuberculosis mortality in the U. S. Zone of Germany began to rise promptly at the beginning of World War II, reached a peak in 1945 and has progressively declined in 1946 and 1947. The extent of the rise was only moderate as compared with that in several other European nations. Philip Sartwell, M.D., Charles H. Moseley, M.D. and Esmond R. Long, M.D., Am. Rev. Tuberc., May, 1949.

# Editorials

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 May, 1950 No. 5

## Medicine And Politics

"Politics and medicine don't mix!" Statements like this frequently are employed by many doctors to justify their failure to register, failure to vote and failure to take part in the political decisions of the local community, the State and the Nation.

Added to this viewpoint is the indisputable and somewhat extenuating fact that the best doctors are extremely busy people, engaged in the night-and-day task of preserving health and saving life.

Nevertheless, this year of decision, 1950, presents American doctors with an undeniable paradox: doctors either must enter the political arena or see politics enter medicine.

For this is not just another election year. It is a year in which medicine itself will be one of the big clay pigeons on the political shooting ranges. The question of Compulsory versus Voluntary Health Insurance — embodying the future not only of the medical profession but of all the American people — will be one of the principal issues in the 1950 Congressional elections.

It is imperative, therefore, that every doctor exercise his franchise this year — his right *as an individual citizen* to register, to vote, and to help influence the political direction of his Nation.

Failure to do so, this year, may mean the ultimate termination of his traditional medical franchise — the right to practice medicine according to ethical professional and scientific standards — not political standards.

## New Committee

Following the action of the last session's House of Delegates, instructing the President to appoint a Committee on Health and Sanitation to advise with government officials of city, county, and state when so requested, President Scull has appointed the following: Drs. Emil R. Mayerberg, Victor D. Washburn, and Gerald A. Beatty, all of Wilmington; Henry V. P. Wilson, Dover, William T. Chipman, Harrington; Bruce Barnes, Seaford; and Ervin L. Stambaugh, Lewes.

## Catastrophe Coverage

One criticism which proponents of socialized medicine have leveled at voluntary programs of sickness cost insurance has been that the long-term chronic diseases are not covered, that the member suffering from a condition which by its very nature is bound to last a long time cannot receive care for the disease under the voluntary plans.

Voluntary sickness cost insurance is a relatively new member of the insurance family in the United States and, from all indications, a lusty, growing child. Both the physician-sponsored and the medical association non-profit plans have undergone a tremendous growth within a space of only a few years. As witness, our own California Physicians' Service has grown from 125,00 to more than 900,000 beneficiary members in less than five years.

With the growth in membership, C.P.S. and other voluntary plans are in a position to delve into new and unexplored types of coverage, their ability to do so springing from the fact that their financial position is secure to the point where a potential loss from a new type of service may be absorbed by the regular program. In this way a number of innovations have been developed, founded on actuarial experience and offered on an economically indicated basis which has later proved to be accurate in the light of experience. Such progress furnishes additional actuarial material as a basis for still further advances.

Latest item in this progressive movement is the announcement by California Physicians' Service of the addition of catastrophe coverage to its group contracts. For a small addition to the regular monthly dues, C.P.S. is now offering medical and surgical care for a list of 23 diseases or conditions for a period of a full two years or to a maximum expenditure of $5,000, whichever is reached first. The diseases covered are cancer, poliomyelitis, rheumatic fever, diabetes, osteomyelitis, tuberculosis and others in the chronic disease classification. The conditions include severe fractures and severe burns.

Here is pioneering at its best. C.P.S. does not know what the cost of this offering will be; however, it believes it knows this cost closely enough to warrant offering this new coverage to its members. If the advance calculations prove to be wrong, changes will have to be made; on the other hand, if the program can more than carry itself financially, it will be possible to add to it in service or to reduce the dues paid for it. Thus the beneficiary members stand to gain in service if experience proves the accuracy of the advance actuarial calculations; they will not be called upon to underwrite a deficit if the cost of care turns out to exceed the dues paid during the trial period.

California Physicians' Service has already been showered with nationwide acclaim for taking this momentous forward step. Its experience will be closely watched and its program will certainly set a pattern for all voluntary programs. Congratulations to those who studied the possibilities of catastrophe coverage, who worked out the methods of providing the coverage and who had the courage to introduce this latest advance in the voluntary system of sickness cost insurance.

Editorial, *Calif. Med.*, March, 1950.

## U. of P. Alumni

The Medical Alumni Society of the University of Pennsylvania is planning to hold medical and surgical clinics at the University Hospital from 9:30 a.m. to 11:30 a.m. on Alumni Day, June 17.

Following the clinics the Society will hold a luncheon at 12:00 noon at the Penn-Sheraton Hotel, 39th and Chestnut Streets.

For further information communicate with Miss Frances R. Houston, Executive Secretary, Medical Alumni Society, at the School of Medicine.

## News And Views

Most of us are familiar with the cow story. It has recently been brought up to date.

Capitalism: If you have two cows, you sell one and buy a bull.

Socialism: If you have two cows, you give one of them to your neighbor.

Communism: If you have two cows, you give to the government and the government gives you the milk.

Fascism: If you have two cows, you keep the cows and give the milk to the government.

New Deal: If you have two cows, you shoot one, milk the other, then pour the milk down the drain.

Fair Deal: If you have two cows, you let them starve so you can buy your milk in cans, thus making business better.

## SECRETARY'S LETTER: A. M. A.

In the "Arabian Nights" there's a passage in which a horseman, riding full gallop, sows dragon seeds . . . and, where they fall, warriors spring forth, fully armed and ready to fight.

The story of how Florida doctors waged an all-out campaign to defeat Senator Claude Pepper, leading exponent of socialized medicine, is quite as dramatic and a lot more real.

During the past several months, none were more enthusiastic in their praise for Rep. George A. Smathers than the doctors. The 36-year-old former Marine, who gave Pepper the soundest trouncing in his long political career, had the support of doctors, their families and their patients from the very beginning because he had gone on record as unalterably opposed to Government-controlled medical care.

Not a single Florida medical association passed a resolution at any time favoring either candidate. But the doctors, as individuals, were plenty active in the Pepper-Smathers campaign because, as one physician put it: "The issue in Florida of Voluntary versus Compulsory Health Insurance involved more than doctors, patients and medicine; it represented the basic struggle between a candidate who would preserve fundamental American freedoms and a candidate who would take them away."

The outcome of the Pepper-Smathers campaign made at least one point clear: Compulsory Health Insurance will continue to be a red-hot issue in the 1950 Congressional elections all over the country because Administration leaders certainly will not interpret Pepper's defeat as being the final answer. On the other hand, some of the more realistic Democrats are probably wishing now that the President hadn't committed the party to a costly government health program as a leading issue of the 1950 campaign.

The Florida doctors started aiming their guns at Pepper back in November, 1949, when a group from Dade (Miami) County met informally with Smathers and learned his views.

From that informal meeting grew "The Dade County Medical Committee for Better Government." Dr. R. B. Chrisman, Miami, was president; Dr. Meredith Mallory, Orlando, vice president; Dr. W. Tracy Haverfield, Miami, secretary, and Dr. Edward R. Annis, Miami, treasurer.

Dr. Annis sparked the campaign. He is a young, practicing physician, possesses a dynamic personality and is an able orator. On behalf of the individual doctors, he served on Smathers' state advisory committee and attended all of the top strategy meetings.

He rallied doctors behind "The Dade County Medical Committee for Better Government" in a fund-raising campaign, collecting $9,000 at two big social functions which Smathers attended. Contributions came from individual doctors from as far away as Texas.

Wives of Florida doctors went to work in a "Get Out the Vote" campaign of their own. Away back last October, they checked Dade County courthouse records to get the number of unregistered doctors. Those who were not registered received telephone calls. A month before registration closed, the women sent reminders to every doctor in the county. And on primary day, May 2, they phoned every physician and dentist and asked if he and his family had voted. By noon, 70 per cent of this Dade County group had voted. Many doctors closed their offices on election day and used their cars to take voters — their patients — to the polls.

The number of absentee ballots cast in Dade County was the highest in history. The reason: absentee ballots were drawn up in accordance with Florida laws and distributed to doctors and hospitals so that chronically ill patients, unable to go to the polls, could vote.

Arrangements even were made with funeral directors to provide free ambulance service for some hospitalized patients. Boys at the Veterans hospital in Coral Gables cast absentee ballots and many of them took the free ambulance ride to the polls.

A month before the primary, a group of individual doctors worked with the Miami Herald on a special health section for the Sunday issue of April 23. The "Smathers For Senator Committee" inserted a big ad smashing at government-controlled medicine.

The Smathers Committee financed a 30-minute broadcast on Compulsory Health Insurance over a state-wide radio network and the man who delivered the talk was Dr. Annis. The public's response was terrific. Dr. Annis received scores of phone calls from all over the state, many congratulatory letters, and requests for rebroadcasts. He spoke again on a Miami radio station on Saturday night before the primary.

Many sincere and hard-working doctors, including Joseph S. Stewart of Miami, Homer Pearson, Miami, Louis M. Orr, Orlando, and Dr. W. C. Payne, Pensacola, arranged for physicians to get together at meetings in different parts of the state.

One of the most effective techniques the doctors used to help mold public opinion in behalf of Smathers was a personal letter-writing campaign. The wives again stepped in to direct and supervise the work and they did a grand job. The doctors in Dade County alone, as individuals and not as members of a medical society, wrote more than 22,000 letters to their patients. The letters met with general approval.

The doctors worked up their own mailing lists, used their own envelopes and letterheads, signed the letters personally, and stamped, sealed and mailed them during the week prior to the primary.

Some doctors say the letter-writing drive had "a very telling effect" on the outcome of the election.

Doctors, as individuals, talked with their patients about the issues at stake; they filled hundreds of speaking engagements, they appeared on radio programs by the score, and they bought and distributed through their offices copies of the book, "The Road Ahead," which graphically portrays the advancing wave of destructive socialistic controls by an expanding government.

And now that the Florida battle is won, Dr. Stewart summed it up this way: "No politician running for office in our state will ever again discount the power of the physicians in the state of Florida. They are wide awake, and interested in better government. What is more significant, they are willing to spend their time, money, effort and energy to see that good candidates — men who believe in freedom for American medicine and the highest principles of American government— are elected to public office."

## OBITUARY

### Stanley Worden, M. D.

Dr. Worden, a former president of the State Board of Health, died suddenly of a heart attack in Pittsburgh on April 11, 1950. He collapsed while walking to his car in a parking lot and died instantly.

Dr. Worden was with his wife, Mrs. Victoria Vaiden Worden, a daughter, Victoria, and a son, Stanley, Jr., when stricken.

The family had been visiting friends at Gambier, Ohio, and was returning when death occurred to Dr. Worden. He was planning to go to Baltimore to enter Johns Hopkins Hospital for treatment.

The son of William Worden and Anna Rall, Dr. Worden was born in Baltimore, August 25, 1896. He graduated from the Baltimore City College and entered the Maryland Geologic Survey, where he worked for eight years, till he enlisted in World War I. He served in the Ambulance Corps two years, one year of which was in France. After the war he was employed in the U. S. Department of Agriculture, Bureau of Soil Bartinology, at Washington.

Leaving the government service, he continued his education at Johns Hopkins University, where he received the degrees of A. B. in 1922, and M. D. in 1926.

Upon completing a year's internship and another year as resident at the Church Home and Infirmary in Baltimore, he began a general practice in Dover in August, 1928. For many years he devoted most of his time to x-ray work, and was chief of service in x-ray and laboratory at the Kent General Hospital.

During World War II he served in the local Examining Board and on the Appeal Board.

Dr. Worden was a member of Nu Sigma Nu medical fraternity, Kent County Medical Society, Medical Society of Delaware, American Medical Association, American Roentgen Ray Society, Maple Dale Country Club and the Homewood Play Shop, Baltimore, and Christ Episcopal Church, Dover. He was a past president of the Kent County Medical Society, member of the Dover Library Commission 1932-1942, former member of the State Board of Health, of which he was President in 1936, and examining physician of the Delaware Children's Bureau.

At the time of his death he was Kent County Chairman of the Delaware Division of the American Cancer Society, Chairman of the Committee on Medical Economics of the State Medical Society and member of its Committees on Tuberculosis and Medical Education, and member of its Council.

Surviving are his wife and two children, both of whom are students at the Dover High School, a brother, Charles F., of Berwyn, Md., and a sister, Mrs. J. L. Brooks of Baltimore.

Services were held in Christ Church with the Rev. Paul A. Kellogg, rector, officiating, on April 15th. Interment was in Christ Churchyard.

## BOOK REVIEWS

Children with Mental and Physical Handicaps. By J. E. Wallace Wallin, Ph. D. Price $6.65. New York: Prentice-Hall, Inc. 1949.

This is a very complete and up-to-date book on handicapped children, clinical and abnormal psychology, and mental hygiene. An extensive bibliography is included with each subject discussed.

This book may well serve as a text book for workers and students in the field of handicapped children. Teachers should find it valuable as a reference source for information regarding children with various physical and mental variations from the normal, especially youngsters with psychotic and prepsychotic disorders. All of these disorders are described and classified according to etiology and special clinical types.

Epilepsy, brain defects, the various types of orthopedically disabled, especially cerebral palsy and poliomyelitis, are also discussed in detail.

The Kenny method, the new concepts of present day treatment of poliomyelitis, the use of prostigmin and curare in the relaxation of muscle spasm in poliomyelitis are also discussed.

This book should be of special interest to Delawareans as the author is a Delaware resident and a director of Psycho-educational Clinics and Special Education and Mental Hygiene in the Departments of Education in Wilmington and Delaware.

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Blackiston's New Gould Medical Dictionary, Edited by Harold Wellington Jones, M. D., First Edition, Edited by Harold Wellington Jones, M. D., Colonel, U. S. Army, Retired, Contributing Editor, Encyclopedia Americana, former Director, Army Medical Library, Washington, D. C.; Normand L. Hoerr, M. D., Professor of Anatomy, School of Medicine, Western Reserve University; Arthur Osol, Ph.D., Professor of Chemistry, Director of Chemistry Departments, Philadelphia College of Pharmacy and Science, Editor-in-Chief, United States Dispensatory. With the assistance of an editorial board and over 100 contributors. Pp. 1294 with 252 illustrations, 129 in color; Prices, $8.50, $10.75, and $13.50.

The new Gould Dictionary includes thousands of new words which have been added to the literature, as late as 1947. A new phonetic system of syllabification and pronunciation is employed, and eponyms and biographical names are included alphabetically. Of equal importance is the deletion of obsolete words. The type is exceedingly clear and legible. Instead of preparing tables in the text under the subject they are all collected together in the back of the book, a device which has its advantages but has also some disadvantages. In the center is an atlas with 252 illustrations.

In our usage of the volume up to now we have found the definitions remarkably clear and accurate. They ought to be, because this dictionary is the first to be built around a university faculty rather than a mere board of editors. We recommend the book as a dependable dictionary—one of the better kind.

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Clinical Aspects and Treatment of Surgical Infections. By Frank Lamont Meleney, M. D., Associate Professor of Clinical Surgery, Columbia University. With a foreword by Allen O. Whipple, M. D. Pp. 840, with 287 figures. Cloth. Price, $12.00. Philadelphia: W. B. Saunders Company, 1949

Meleney's book fills a long felt want, and includes a historical survey of the subject. The management of all types of infections, whether the treatment involves chemicals, antibiotics, or other therapeutic agents, is given in detail. Practically all the body systems are included. The work contains a most complete bibliography. We consider this to be the outstanding book on this subject.

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Operative Technique in General and Specialty Surgery. Edited by Warren H. Cole, M. D., Professor of Surgery, University of Illinois. Two volumes. Pp. 1738, with 1950 illustrations. Cloth. Price, $30.00. New York: Appleton-Century-Crafts, Incorporated, 1949.

Dr. Cole, as editor, has enlisted the services of 55 leading American surgeons to produce this two volume opus. Volume 1 is devoted to General Surgery and Volume 2 to Specialty Surgery, which includes all specialties except oto laryngological, opthalmological and obstetrical surgery. This work is more complete than most texts of its size; in fact it stands between a one-volume text and a system. Procedures proven in the large experience of the various authors are stressed, and in proper detail. The illustrations are numerous and helpful; the index is excellent.

We heartily recommend this work to the practicing surgeon who wants quick help, and to the surgical interne or resident who wants an adequate but not too elaborate reference work.

Fundamentals of Otolaryngology—A Textbook of Ear, Nose and Throat Diseases. By Lawrence R. Boies, M. D., Clinical Professor of Otolaryngology, University of Minnesota Medical School, and Associates. Pp. 443, with 184 figures. Cloth. Price, $6.50. Philadelphia: W. B. Saunders Company, 1949.

The title of this book is descriptive. The fundamentals of ear, nose and throat diseases are adequately detailed and, with the aid of numerous and excellent illustrations, a quick survey of these three fields can be made. We feel it accomplishes its purpose admirably as a textbook of fundamentals; it does not aim to be complete or exhaustive. For the purpose for which it was written, we recommend it to students and general practitioners.

Operations of General Surgery. By Thomas G. Orr, M. D., Professor of Surgery, University of Kansas School of Medicine. Second Edition. Pp. 890, with 1700 step-by-step illustrations on 721 figures. Cloth. Price, $13.50. Philadelphia: W. B. Saunders Company, 1949.

The second edition of Orr is most welcome after a lapse of five years since the first edition. Our personal frequent experiences with the first volume impressed us as being one of the very finest one-volume works on surgical technique that we have yet seen. The second edition contains many new operative procedures, and all chapters have had revisions or additions. We consider this edition to be even better than the first, and we predict for it an equally successful career.

Practical Aspects of Thyroid Disease. By George Crile, Jr., M. D., Department of Surgery, Cleveland Clinic. Pp. 355, with 101 figures. Cloth, Price, $6.00. Philadelphia: W. B. Saunders Company, 1949.

Crile's little books deal with the physiology of the thyroid, with pathology, diagnosis, medical treatment, pre-operative preparation, the technique of thyroidectomy, its post-operative care, and complications. Several chapters are devoted to normal tumors of the thyroid, and also congenital anomalies and thyroiditis. It concludes with a plea for team-work in the treatment of thyroid diseases, since this involves the combined fields of internal medicine, roentgen therapy, nuclear physics, and surgery.

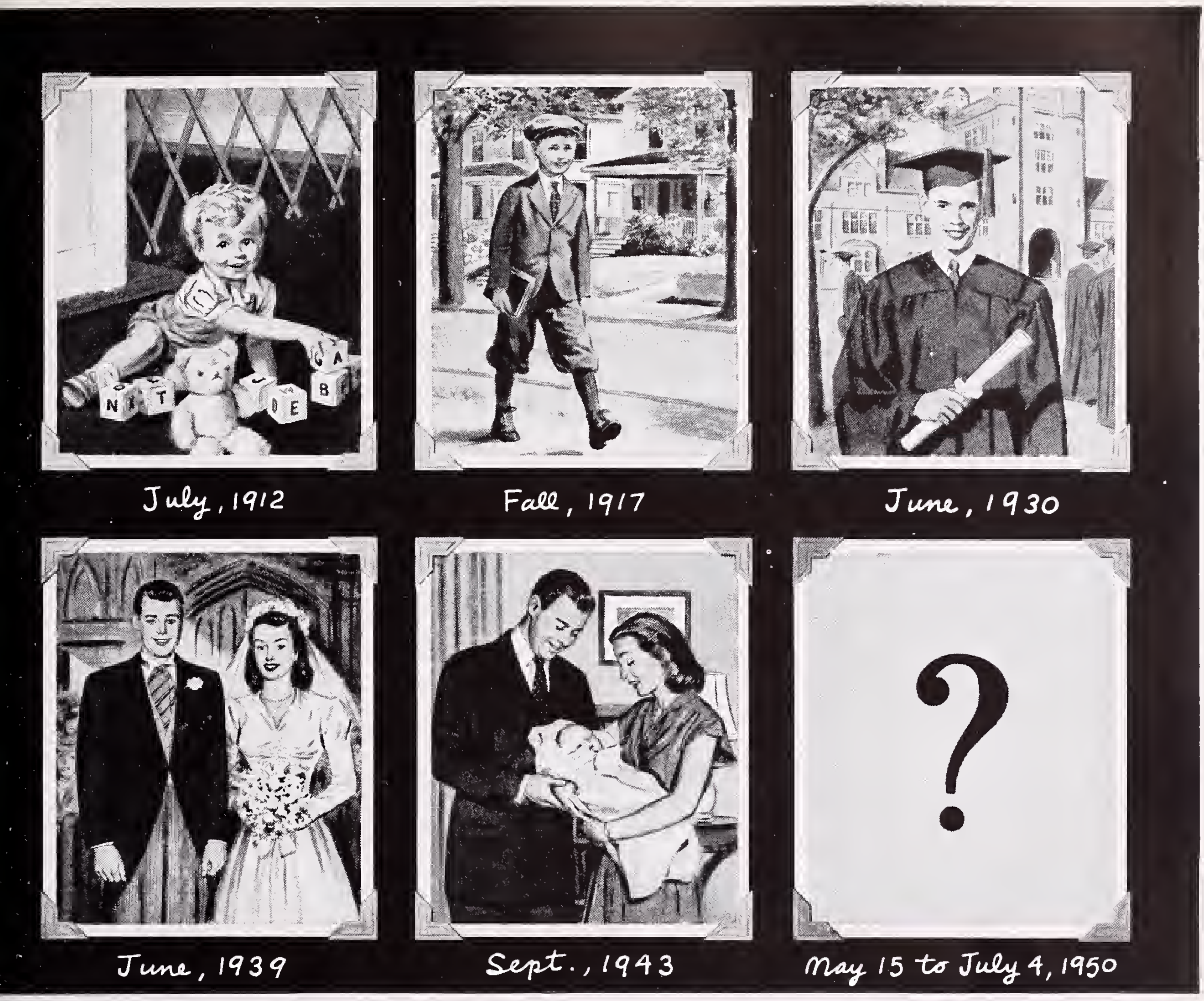
The book is an excellent reference work for the surgeon and for the medical man who treats thyroid patients.

Handbook of Medical Management. By Milton Chatton, M. D., Sheldon Margen, M. D., H. D. Brainerd, M. D., of The Medical School, University of California. Paper. Pp. 480. Price, $3.00. Palo Alto, California: University Medical Publishers, 1949.

This is a little book of pocket size but thick enough to be too bulky for a pocket. It contains directions for treatment after the diagnosis is made; also many tables. The book lacks a table of contents but the index is quite complete. To our mind the proper place for this book is in the glove compartment of the doctor's automobile.

Medical Etymology—The History and Derivation of Medical Terms for Students of Medicine, Dentistry, and Nursing. By O. H. Pepper, M.D., Professor of Medicine, University of Pennsylvania. Pp. 263. Cloth, Price, $5.00. Philadelphia: W. B. Saunders Company, 1949.

The title of this book is definitely descriptive in that it gives in rather complete detail the origin of the words used in medical work, both pre-clinical and clinical, in dictionary form. Many of these derivatives will bring a smile. This book belongs in the library of the physician who has time to devote to the cultural aspects of his profession. It is not intended to replace the regular medical dictionary. It is a worth-while contribution to the field of medical semantics.



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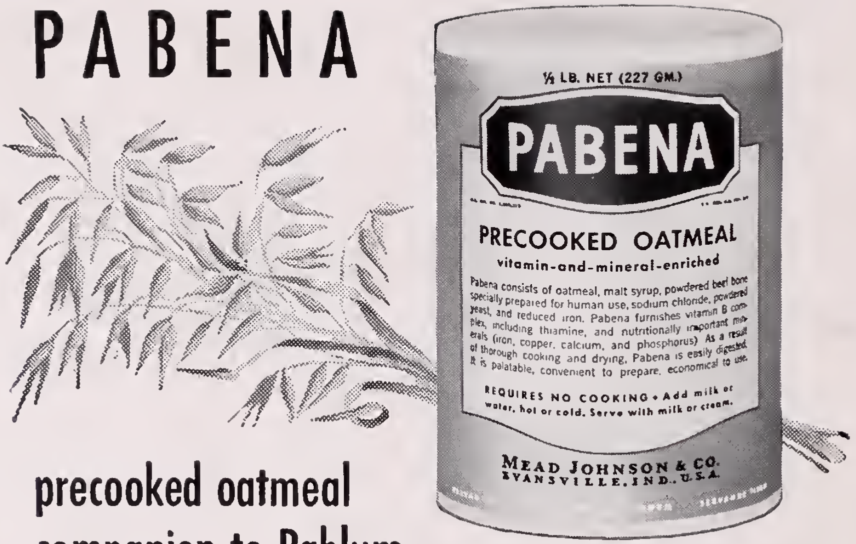
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# DELAWARE STATE MEDICAL JOURNAL

*Official Organ of the Medical Society of Delaware*
INCORPORATED 1789

VOLUME 22
NUMBER 6

JUNE, 1950

Per Copy, 50c
Per Year, $4.00

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

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*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

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# A FEW OF THE MORE IMPORTANT PROBLEMS IN THE HIP JOINT OF THE CHILD*

Alfred R. Shands, Jr., M. D.**
and
Frank P. Kreuz, Captain (M. C.), U. S. N.
Wilmington, Del.

Congenital and developmental conditions form the major group of problems in the hip joint of the child and are the subject of this discussion. The greatest enthusiasm of a specialist is always manifested in those conditions which come within what is termed the "unsolved group," and within this group can be placed these conditions. It is realized by the orthopaedic surgeon that a great many of the deformities and subsequent complications of these conditions could be prevented if there were the proper early recognition of the lesion by the general practitioner. On account of the fact that there is so much which can be done for these conditions when recognized in their early stages, your essayists feel it is most appropriate to present this subject to the Medical Society of Delaware with a few remarks on those cases treated at the Alfred I. duPont Institute.

First, a word about the anatomy of the hip. The hip is a ball and socket joint with a cupped-shaped acetabulum and a spherical-shaped head of the femur. The latter is covered by hyalin cartilage which is contiguous with the peripheral cortical bone surrounding the neck of the femur. Beneath the cartilage layer and bony cortex is cancellous bone. Up to approximately the fourteenth year in girls and the sixteenth year in boys, there is across the neck of the femur at its junction with the head a band of hyaline cartilage called the epiphyseal plate. That portion of the femur on the acetabular side of this plate is called the epiphysis. The angle of the neck of the femur to the shaft is variable with different ages. At birth, the angle is from 140° to 160° with a forward rotation of the neck on the shaft (anteversion) of 35°. Both of these angles decrease with age, weight-bearing, and growth. At birth, the epiphysis is not apparent, but appears shortly thereafter.

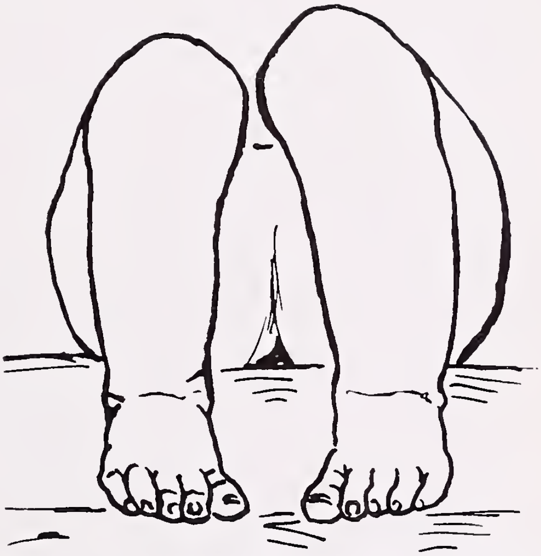

**Figure 1.** Sketch of a young infant lying on back with hips and knees flexed. There is a congenital dislocation of the right hip. Note the difference in knee levels. (After Freiberg)

Surrounding the head and adjacent portion of the neck is the capsule which is attached to the peripheral borders of the acetabulum. The blood supply which is so important to normal growth and development is from three sources: (1) the vessels of the ligamentum teres, (2) the vessels in the capsular attachment (circumflex femoral), and (3) the vessels in the cancellous bone of the neck which arise in the shaft of the femur.[1] Interference with any one of these blood supplies, but particularly that from the medial or posterior femoral circumflex artery, may be the cause of aseptic necrosis, or necrotic changes, in the head of the femur. It is important to appreciate that in any surgical procedure, open or closed, great care must be taken not to manipulate too vigorously for fear of causing injury to this blood supply.

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*Read before the Medical Society of Delaware, October 11, 1949.

**Professor of Orthopedic Surgery, University of Pennsylvania, and Visiting Medical Director, Alfred I. duPont Institute of the Nemours Foundation.

What constitute the more important congenital and developmental conditions in the hip joint of a child? These are: (1) congenital dislocation, (2) coxa plana, (3) epiphyseal coxa vara (slipped epiphysis), and (4) congenital coxa vara.

### A. Congenital Dislocation of The Hip

The term "congenital dislocation of the hip" is not completely accurate because it implies that the condition was present at birth. The available evidence on the subject definitely repudiates this implication. Few cases of actual dislocation could be found to have occurred in pre-natal life or to have been discovered shortly after delivery. The condition is in reality a congenital hip dysplasia.[2],[3]. There has been shown to be a close relationship between congenital hip dysplasia and congenital club feet.[4] In a series of 364 cases of subluxation of the hip, associated club feet were found in 55%. Of 500 cases of club feet in another series, 39% had associated hip dysplasia. It has been surmised that a congenital club foot is caused by an embryologic arrest of an external rotation of the fetal limb. This observation and the close relationship between these two congenital abnormalities strongly suggest that failure of rotation of the fetal limb bud is also the cause of congenital hip dysplasia.

Congenital dislocation occurs more frequently in children of Latin parentage, and from 85% to 90% of the cases are girls. The latter has been explained on the basis of there being a higher stage of ontological development in the female than in the male. It has been stated that "their mono-embryonic pelvis has departed farther from the more primitive or poly-embryonic pelvis of the male."[5] It has also been explained on the basis that boys have a pelvis broad above and narrow below because of the coming together of the ischii, the result being that the acetabula are placed more horizontally, thus giving the head of the femur a good support. In girls, the opposite is true; for the subpubic angle is widened, the ischii are more separated, and the acetabula are more vertical.[6]

In the first few months of life, the condition is practically always a simple dysplasia without dislocation and only a mild or moderate degree of subluxation which makes the early diagnosis, especially in bilateral cases, more difficult. If the condition is present on one side only, and if the subluxation is sufficiently established, the affected side may show (1) a slight limitation of abduction, (2) the thigh to be a little more externally rotated, (3) a slight decrease in the normal flexion contracture of the hip (35°), (4) an increase in the number of, or a deepening of, the folds on the adductor side of the thigh (Fig. 2), (5) an apparent shortening of the thigh on the involved side (6) possibly a slight looseness of the joint determined by pulling down and pushing

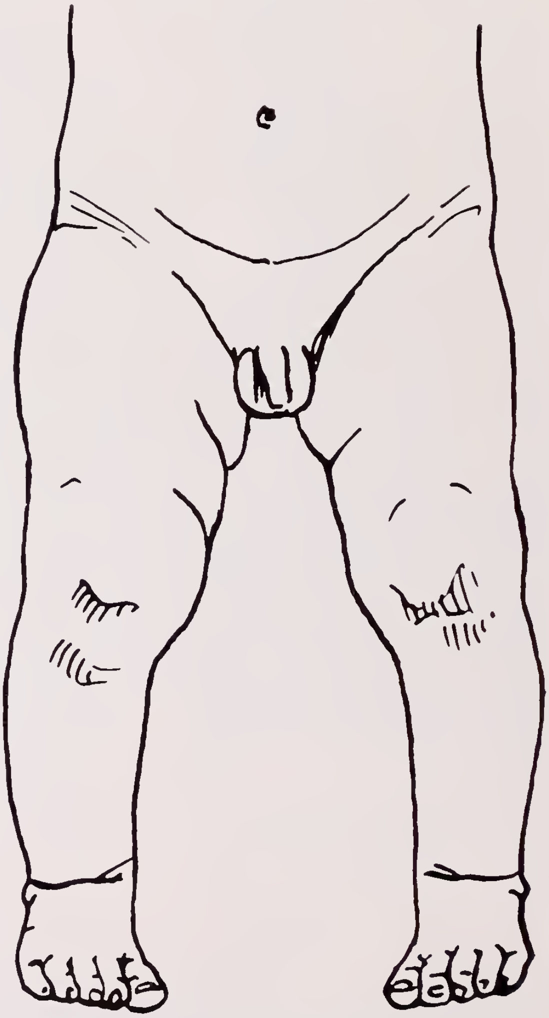

**Figure 2.** Sketch of a young infant with congenital dislocation of the right hip. Note the fullness in the right greater trochanter area and the two thigh creases on the right contrasted with one on the left. These findings are not always conclusive but are suggestive of a congenital dislocation of the hip. (After Freiberg)

up the thigh on the pelvis or piston mobility (telescoping sign), (7) the pulsation of the femoral artery to be distinctly less palpable on the affected side, and (8) a slight lateral bulging of the greater trochanter when the flexed and externally rotated thigh is brought to an adducted position. The diagnosis can usually be made from the roentgenogram with the following three diagnostic signs being looked for (Putti's triad): (1) delayed appearance of the osseous capital epiphysis as compared with the normal side, (2) increased distance of the trochanter from the acetabulum, and (3) abnormally steep or short acetabulum roof (Fig. 3). In the bilateral case, there is a characteristic widening of the perineum.

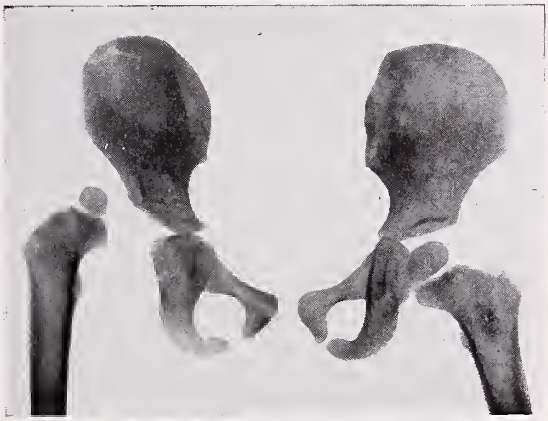

**Figure 3.** Roentgenogram of the hips of a child age 2½ years showing a congenital dislocation of the right hip. Note the shallow right acetabulum, the underdevelopment of the right upper femoral epiphysis, and the displacement upward of the head and the shaft of the femur.

After the walking stage, the diagnosis is somewhat less difficult to make. The abnormal posture with the protruding abdomen, increased lumbar lordosis, and waddling gait is quite characteristic. There may be a positive Trendelenberg's sign (standing on the leg of the affected side causes the opposite side of the pelvis to point down instead of up as it does in standing on the leg of the normal side). As the child grows, the lumbar lordosis and abdominal protrusion often become more prominent, and in the later stages all roentgenographic changes are more marked than in the early stages.

The treatment for the early case, that is before weight-bearing and walking, is to keep the hips and thighs in an abducted position. This may be accomplished by applying between the legs a Putti wedge-shaped splint[7] or using a Frejka's pillow splint.[8] Plaster long leg casts with cross bars or shoes with a cross bar may obtain the same abduction of the hips. In one large Italian clinic, 94% of many hundreds of patients with hip dysplasia have been reported cured by this simple abduction treatment before weight-bearing.[9]

The treatment for the older patient with actual dislocation is a gentle closed manipulative reduction of the hip which should always be preceded by preliminary stretching of the soft tissues with adhesive or skeletal traction. After the reduction has been obtained, a frog-leg plaster spica with the hips in 90° flexion, 90° external rotation, and 90° abduction is the treatment of choice, although in some clinics, a plaster spica with the hip in a position of abduction and full internal rotation is used. However, the frog-leg or 90-90-90 position has been used successfully for more than a half century, and is the definite choice of the senior essayist. The 90-90-90 position is maintained for six months following which the legs are brought down to 45° abduction with the same amount of decrease in the external rotation and hip flexion and maintained in plaster for an additional three months. This is followed by three months of physical therapy and then weight-bearing. In 11 cases the end results of this treatment at the Alfred I. duPont Institute have been satisfactory with 9 cases excellent (Fig. 4).

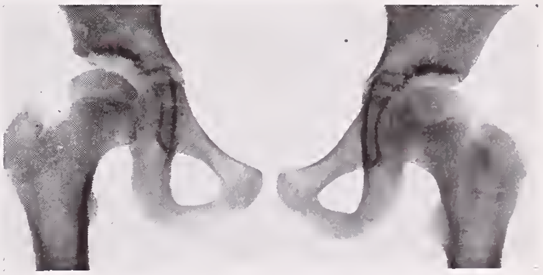

**Figure 4.** Roentgenogram of the hips of the same child as shown in Figure 3, seven years later. A closed reduction had been performed immediately following the roentgenogram in Figure 3. Legs of patient are of the same length and the motion in both hips is equal. Patient walks without limp or pain. End result considered excellent.

If a reduction cannot be accomplished and satisfactorily maintained by a closed manipulation, an open operation is definitely indicated. There are many different types of open operations described. The operation preferred by the senior essayist is that of exposing the hip joint, cleaning out the acetabulum of redundant soft tissue, and putting the head of the femur into the deepened acetabulum. This operation is followed by immobilization in plaster in an abducted and internally rotated position for ten to twelve weeks. The results of 3 cases at the Alfred I. duPont Institute treated in this manner have all been good.

Reconstructions of the hip and osteotomies may be indicated for the old unreduced case. There have been 7 old cases treated in this manner at the Alfred I. duPont Institute with a few excellent results. Shelf operations may be indicated if there is instability following reduction.[10]

In summation of the recognition and care of the congenital hip dislocation, remember that this may manifest itself either immediately after birth or after the child begins to walk. Make your diagnosis early, if possible; do not wait until the actual dislocation has occurred. Always suspect a congenital hip dysplasia or subluxation of the hip in children born with club feet or other congenital abnormalities and especially of Latin parentage. Do not fail to take roentgenograms in all cases which are in any way suspicious. Make a careful physical examination of all infants and children, inspecting for abnormal skin creases in the thigh, and palpating for absence of fullness in the anterior aspect of the joint and pulsation of the femoral vessels. Look for slight shortening of the leg and limitation of abduction in the hip. If in doubt, or as soon as your diagnosis has been made, refer the patient to the orthopaedic specialist.

### B. Coxa Plana (Legg-Perthes-Calve Disease)

Coxa Plana occurs in boys in 85% to 90% of the cases. It is usually found between the ages of five and ten, although it may appear as early as three years. It is significant that the age incidence is usually in the middle childhood or during the permanent tooth period. Since the teeth are considered to be a part of the skeleton and the age of onset of the disease and the beginning of permanent dentition correspond to the stage of development when for the first time since birth the development of the female is not definitely in advance of the male, it is possible that certain variations in the growth of the head and neck of the femur are present in boys during this period which predispose them to coxa plana.[11] The disease is unilateral in approximately 90% of the cases.[12]. The cause of this condition has never been determined. It is thought to be due to a vascular disturbance of the epiphysis. Such etiological factors as infection, trauma, hereditary influences, and endocrine factors have been suggested but never proven.

The disease is divided into four stages. The first stage is the incipient stage in which there is usually a synovitis accompanied by a slight limp. There may be no roentgenographic changes. The second stage is that of degeneration in which there is shown by roentgenograms a fragmentation and disorganization of the bony structure of the epiphysis (Fig. 5). It may begin on the diaphyseal side of the epiphyseal plate and then involve the head. At this stage there may be pain in the hip or along the medial aspect of the thigh. The third or healing stage is that of regeneration in which the roentgenograms show new bone formation and disappearance of the fragmented appearance (Fig. 6). The fourth or residual stage is when the roentgenograms show a completely regular recalcification of the epiphysis. At this time the patient may be allowed to get up and walk. The first stage may last several weeks. The second stage is from 1 to 1½ years, and the third stage from 2 to 3 years or longer.

A mild limp which may be present on fatigue is the most common presenting evidence. This may be followed by muscle spasm and pain occasionally radiating to the knee. Limitation of motion in the hip, usually abduction and internal rotation, may then be present. Seldom is there febrile reaction in the beginning or at any time during the disease. In the second stage, a thick boggy capsule of the hip may be palpated anteriorly (Gill sign). This is then followed or accompanied by the positive roentgenographic findings of areas of absorption, irregular decalcification, widening of the epiphyseal plate, irregular disintegration of the head, and a thickening of the neck (Fig. 5).

The treatment is bed rest in the early stage with traction to relieve the muscle spasm. Continued bed rest should be carried out in the very young through the healing stage. In the older children with the disappearance of muscle spasm and pain, it may be safe to allow the patient to be up either, 1) with crutches and a high-soled shoe on the good leg, or 2) with a hip sling to the affected leg to prevent weight-bearing, or 3) with a non-weight-bearing brace on the affected leg. The objective of all treatment is to prevent pressure upon the head during the time when this may cause further disintegration and flattening. There have been 35 patients treated at the Alfred I. duPont Institute. The results of those patients who have carried out what is considered adequate treatment have been excellent (Fig. 6).

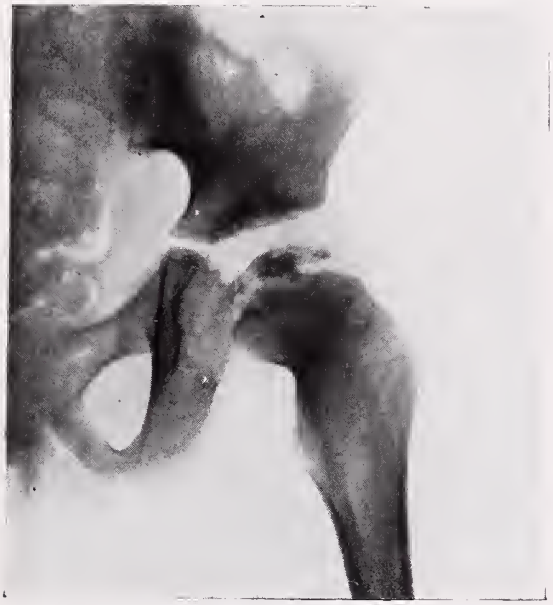

**Figure 5.** Roentgenogram of right hip of boy age 6 years showing coxa plana at beginning of second stage. Note areas of irregular density in the epiphysis with fragmentation. First evidence of condition was pain in the knee with slight limp approximately twelve months prior to this roentgenogram and eight months prior to hospital admission.

In summation, do not regard lightly mild hip symptoms in a child between the ages of 3 and 10 years. Keep him off his feet and preferably in bed with traction. Do not regard a negative first roentgenogram report as final. Very often the pathology does not show up until later. Do not make a negative diagnosis until all symptoms and signs are completely gone and repeated check roentgenograms are negative. Do not fail to obtain both lateral and anterior-posterior roentgenograms of the hip. Do not forget that a slight limp and a slight limitation of motion with or without pain is an early clinical manifestation of the disease. Do not forget that the treatment should be continued until the head of the femur shows roentgenographic evidence of complete smooth regeneration. Complete cooperation of the patient as well as the parents is absolutely necessary for a good result.

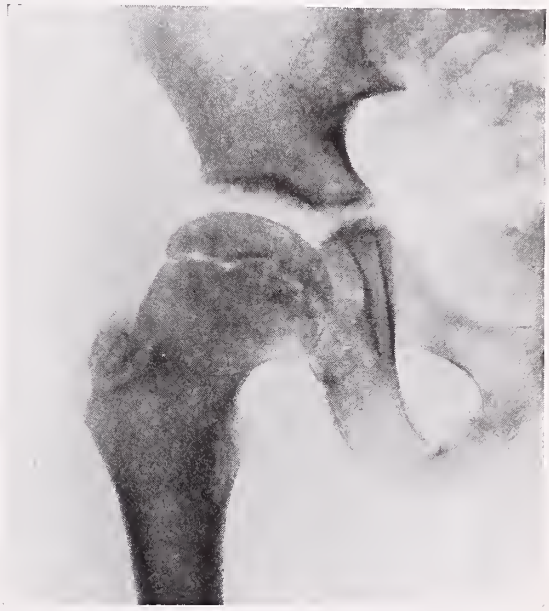

**Figure 6.** Roentgenogram of right hip of same patient as shown in Figure 5. three years later. (Print has been reversed.) Note smooth regular epiphysis, almost complete recalcification, and only a few areas of irregular density. Patient was treated by rest in bed for sixteen months with the first three months in traction, and was not allowed weight bearing for three years from date of hospital admission.

### C. Epiphyseal Coxa Vara or Slipping of the Upper Femoral Epiphysis.

Epiphyseal coxa vara is essentially a disease of the epiphyseal plate of the neck of the femur which produces a pathological separation between the head and neck and consequently an atypical deformity. It is a "loosening or dissolving" of the epiphyseal plate. Whereas coxa plana occurs almost exclusively in boys during the middle childhood stages of development in the hip between the ages of three and ten, this disease condition occurs in the late childhood or the pre-adolescent stage between the ages of eight and sixteen. The incidence in girls gradually approaches that in boys. The incidence of bilateral involvement increases to about 20%, whereas in coxa plana it is about 10%.

The cause of this condition is not known, but the best evidence is that it is due to a disturbance of the endocrine glands. It is very often found in fat children who have an abnormally slow development of the genitalia (Froehlich's syndrome) and in tall, skinny children. It is thought at times that trauma may play a part, and evidence certainly is given in the histories of many patients that this may be the immediate cause. The condition may be recognized in a roentgenogram in the pre-slipping stage with a very minute and minimal change in the epiphyseal line, or it may not be recognized until the slipping stage (Fig. 7). This may be of varying degree from a very small amount to a complete separation of the epiphysis from the neck. The length of time of the pre-slipping stage is not known.

The first symptoms in the pre-slipping stage are usually very mild and may even be non-incapacitating. There may be a slight feeling of fatigue and weakness in the leg with an occasional slight pain in the knee. At times there may be a vague discomfort referable to the hip. It may be followed by a very slight limp especially after strenuous activity. The pain in the hip may be referred to the medial aspect of the thigh or to the knee. Frequently the patient will complain of limitation of motion or weakness of the hip. In the slipping stage, the diagnosis is much easier as all the symptoms are more pronounced. There is increase in pain, limp, and limitation of motion with a rather marked muscle spasm. The leg is usually held in a position of external rotation due to the spasm of the external rotators of the hip and the forward displacement of the neck at the epiphyseal plate.

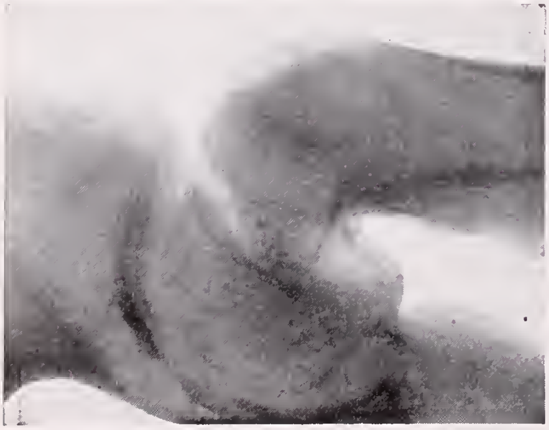

**Figure 7.** Roentgenogram of left hip of boy age 15 years showing marked slipping of the upper femoral epiphysis from the neck of the femur with coxa vara. Left hip had been injured in a fall three months prior to roentgenogram. Patient had been unable to bear weight on the leg for the last six weeks.

Roentgenographic findings are quite conclusive. These are an increase in the widening of the epiphyseal line comparable to the amount of slipping, and a variable distortion between the head and neck. Lateral roentgenographic views are always important and it is from these that the exact amount of slipping can be accurately measured. The head actually is displaced downward and backward and the neck is displaced upward and forward (Fig. 7). In the advanced stage there is a varus and anteversion of the neck. The head of the femur may show evidences of disintegration or aseptic necrosis, especially when the slipping is pronounced and has been present for sometime.

Conservative measures are definitely indicated in the early or pre-slipping stage. Complete bed rest with traction should be the first treatment and continued during the duration of the muscle spasm. This may be followed by 1) continued recumbency with or without traction, 2) crutches and an elevated shoe on the unaffected side, 3) a long leg ischial-bearing brace, 4) internal rotation brace of Milch, 5) a Whitman plaster spica with or without an incorporated walking iron, or 6) the hip sling of Fort or Snyder. In some clinics, the treatment in the early or pre-slipping stages is immediate nailing.

The acute slipping is an emergency condition. The displacement should be reduced as soon as possible. This may be done occasionally by continued adhesive or skeletal traction in abduction and internal rotation.[13] Sometimes it may be accomplished by very gentle manipulation, (Fig. 8) although a great many orthopaedic surgeons condemn closed reduction. The most common form of treatment now is an open reduction; the displaced epiphysis is replaced on the neck and fixed to the neck with a Smith-Peterson nail or pins of the Moore or Knowles type.[14] In some clinics autogenous bone pegs are placed across the epiphyseal line after reduction.[15] No weight-bearing should be allowed following either open or closed reduction until there is by roentgenogram evidence of a complete obliteration of the epiphyseal line. It may be necessary to protect the hip with a non-weight-bearing brace or splint or the wearing of a hip sling.

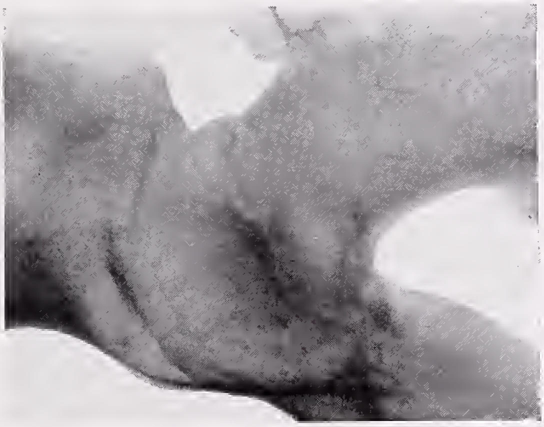

**Figure 8.** Roentgenogram of left hip of same patient as shown in Figure 7. three and a half months following a gentle closed reduction. Note beginning disappearance of epiphyseal line and good anatomical reposition with no evidence of coxa vara.

The treatment of the late stage is extremely unsatisfactory once there is a fusion between the epiphysis and the neck. Cervical osteotomies to correct the deformity have been employed successfully in many clinics, but it is a rather difficult procedure and should not be done by the inexperienced surgeon.

Thirteen patients with early and late slipping have been treated in the Alfred I. duPont Institute with 75% satisfactory results. The best results are definitely in the early cases.

In summary, remember that any adolescent with mild symptoms referable to the hip with or without history of trauma should be treated immediately for epiphyseal coxa vara allowing no weight-bearing. Do not forget that the earliest clinical evidence is slight limitation of external rotation and abduction. Do not forget to take anterior-posterior and lateral roentgenograms of both hips as the incidence of bilateral involvement is high. Do not forget that weight-bearing should not be allowed while making your diagnosis and in treatment until the epiphyseal line is closed.

### D. CONGENITAL COXA VARA

Congenital coxa vara is extremely rare as compared to the former three conditions. A diagnosis is seldom made without the assistance of a roentgenogram. Its cause is primarily a developmental defect in the head and neck of the femur. It is sometimes found secondary to such conditions as achondroplasia and chrondrodystrophy.

The first evidence is usually manifested upon walking, the child appearing to have an awkward gait and very often a "waddle" from side to side very much like the "duck waddle" of a congenital dislocated hip. There is usually stiffness and oftentimes weakness through the hips and legs. If it is unilateral, there may be a limp. There is nearly always a rather marked limitation of abduction and internal rotation. During the later stage, the deformity is one of external rotation and prominence of the greater trochanter.

The roentgenograms show a very definite decrease in the angle of the neck of the femur to the shaft. In the early case there may be seen a triangular area of bone on the inferior aspect of the neck which disappears as the patient becomes older. The acetabulum is nearly always found to be quite shallow. Associated with this is a marked upward prominence of the greater trochanter.

The treatment is minimal in the early stage. If there is stiffness associated with muscle spasm, rest in bed in traction is indicated. Sometimes manipulation into an overcorrected position may be followed with good results; also a non-weight-bearing long leg brace may help. A subtrochanteric osteotomy is nearly always indicated for the older, more pronounced case.[16] This results in an increase in the angle of the neck to the shaft as well as an increase in leg length.

Ten cases of congenital coxa vara have been treated at the Alfred I. duPont Institute. All of these suitable for surgery for which a subtrochanteric osteotomy has been done, have excellent results.

CONCLUSIONS:

1. There have been presented brief discussions of the diagnosis and treatment of the following conditions of the hip joint of the child with a word on the results of treatment of those patients seen at the Alfred I. duPont Institute:
    - a. Congenital Dislocation
    - b. Coxa Plana
    - c. Epiphyseal Coxa Vara (Slipped Epiphysis)
    - d. Congenital Coxa Vara
2. The general practitioner should:
    - a. Remember that early recognition and treatment of certain congenital and developmental conditions of the hip in a child may prevent serious later deformity.
    - b. Never disregard mild pain in the hip, thigh, or knee in a child up to sixteen years of age with or without a limp.
    - c. Examine the patient closely for muscle spasm and limitation of motion especially adduction and internal rotation.
    - d. Always have anterior-posterior and lateral roentgenograms taken of both hips for an unexplained limp and lower extremity pain.
    - e. If the diagnosis is in doubt, always immediately limit activity and weight - bearing by putting the patient to bed or on crutches.
    - f. Remember that the best treatment of these patients always can be given by the orthopaedic surgeon who is especially trained in their care.

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## DISCUSSION

DR. IRVINE M. FLINN (Wilmington): There is little to add to this most excellent and thorough paper. I would like to emphasize two or three things which Dr. Shands has mentioned in his conclusions.

The first one is to be sure to watch the other hip. In one of his cases of Legg-Perthes disease the other hip became involved considerably later than usual; ordinarily the two are concomitant. If we take an x-ray of just one hip we lose sight of the other one, and the child, then, is of course not being treated rightly or thoroughly.

The other thing I wish to emphasize is pain in the knee. Frequently I see patients, children and adults too, where the patient complains of pain in the knee. X-rays have been taken of the knee and nothing has been found. Then an examination is made and the limitation of motion of the hip and the x-rays reveal something definite. If a patient complains of pain in the knee and nothing can be found there be sure to take an x-ray of the hip also. I don't know why it is — Milford is a very delightful place, but it has one peculiarity. Ordinarily, Perthes, as Dr. Shands says, begins usually between six and seven years of age, occasionally earlier. There was one case I saw in Milford some two or three years ago, where it began at the age of two, and I saw some x-rays at the Milford Hospital the other day where it began at nine months. I just don't know what is wrong with Milford.

DR. THEODORE B. STRANGE (Wilmington): I am sure we all enjoyed Dr. Shands' excellent paper and realize that such a detailed and lengthy subject could not be discussed in a few minutes.

I have concentrated on the subject of congenital dislocation of the hip, which in itself is an absorbing subject. The fact that so much literature has been written on this subject and the number of treatments that are advocated leads one to realize that it is complicated.

Though numerous methods are advocated by different clinics and orthopedists there is universal accord on one phase: that is, the earlier the treatment is started the easier it is to correct the deformity, whether it be a dislocation, subluxation, or preluxation.

It is obvious that early diagnosis means early treatment. In such countries as Italy and Czechoslovakia, where the incidence of congenital hips is higher than in the United States, the laity as well as the medical profession is on the lookout for congenital hips.

However, the diagnosis may be made or at least one may become suspicious of congenital hips by a few simple clinical tests. These tests and observations should be performed on every infant and made a routine part of every physical examination.

The following slides were prepared for a scientific exhibit for the American Academy of Orthopedic Surgeons in Chicago this past January, and I have copied their slides.

(Slide) There are seven clinical tests that we can all examine for in a matter of a few minutes, and this is the first one which is increase in the depth and asymmetry of the inguinal fold as it is outlined here.

(Slide) The next slide, with the infant on his abdomen, shows an increase in depth and asymmetry of the gluteal fold.

(Slide) This shows the habit attitude of the patient. Here again the inguinal fold is deep with the child supine and with the thighs flexed.

(Slide) The fourth slide shows the habit attitude while prone, outlining again the gluteal fold and the knee flexed and extremity rotated.

(Slide) This shows the habit attitude with the patient sitting and the legs crossed, showing the right hip assuming generally this attitude.

(Slide) In forced abduction, there is this obvious limitation of motion, the involved side not being abducted to the extent that the uninvolved may be, and the inguinal fold again is more prominent on the involved side.

(Slide) The last slide shows a functional shortening of this right extremity as compared to the left, with the hips and knees flexed.

The adduction contracture is the presenting sign in early dysplasia and congenital dislocation of the hips. This adduction contracture is demonstrated very easily in an infant by placing the infant on its back and forcibly abducting the thighs. This is a very simple procedure to do and invariably the involved side is not able to be fully abducted, whereas the uninvolved side is.

Because of this adduction contracture the inguinal and gluteal folds are deepened, the skin is macerated due to the added contact, the folds are increased in width, and the folds are more cephalad on the affected side.

In conclusion, I would like to emphasize that the keynote to successful treatment of congenital hips is early diagnosis. This is easily done by applying the tests as described, which should be made a routine part of every physical examination of all infants.

Dr. Leonard A. Hershon (Wilmington): What becomes of the blood circulation to the hip in congenital dislocation?

Dr. Shands: First, to answer the question as to the circulation, we have slides, which we didn't present, which show beautifully the circulation of the hip in the infant. You have three blood supplies — namely, through the capsule, through the neck from the shaft, and from the ligamentum teres. Actually, the blood supplied through the ligamentum teres is practically nil in the infant and young child, so you do not have to be concerned with this blood supply. You do have to be concerned with the blood supply coming from the capsular vessels and the vessels going through the neck up to the epiphyseal line.

Dr. Flinn's point about watching the other hip is very well taken. In all these conditions which I have described, never be satisfied with one anterior-posterior roentgenogram of one hip. Always take laterals of both hips as well as both anterior-posterior views. Do not forget that pain in the knee, which Dr. Flinn re-emphasized, may mean pathology in the hip, and pain in the hip may mean pathology in the spine. If these few points are borne in mind, you will certainly seldom miss these conditions in the child's hip.

Dr. Strange has given you a very nice presentation of simple tests and things to look for. I thank the discussants very much.

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## HYPERSPLENISM AND SPLENECTOMY*

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Myths and speculation concerning hypersplenism and splenectomy are of great antiquity. An old English translation of Pliney[1] states: "This member (the spleen) hath a propiete by itself sometimes to hinder a man's running; whereupon professed runners *** that bee troubled with the splene have a devise to burn and waste it with a hot yron. *** They say that the splene may be taken out of the body by way of incision and yet the creature live nevertheless; but if it be a man or woman that is thus cut for the splene, he or she looseth their laughter by the means. For sure it is that intemperate laughers have always great splenes."

The modern era of hypersplenism and splenectomy dates from about 1900. In the two following decades most of the clinicopathologic ground-work was laid for the current "new look" hypotheses and procedures.

Hypersplenism is defined as an exaggeration, and perhaps perversion, of splenic function resulting in reduction of one or more of the cellular elements of the blood. The *modus operandi* remains controversial. The "mechanical" hypothesis of cellular sequestration, phagocytosis and lysis by the spleen (protagonist: Doan) is opposed by the "hormonal" hypothesis of excessive marrow inhibition by the spleen (protagonist: Dameshek). We believe that both mechanisms operate, but that neither accounts for all the facts. It is reasonable to believe that the homeostasis of the formed elements of the blood may be in part controlled by products of destruction of such elements. Menkin[2] has demonstrated, for example, two leukopenic components in tissue exudates. While these substances have not been found in normal plasma, they, or similar components, could be constantly formed in, and liberated from, the spleen, lymphnodes and other "barrier tissues" and thus contribute to leukocytic homestasis. Recently Castle and co-workers[3] have demonstrated the fact that in "acquired" hemolytic states of anemia the red corpuscles may become sensitized, by a globulin-plasma component, to ready hemolysis (mechanical or osmotic) through residence in, or contact with, abnormal splenic pulp tissue. These and similar mechanisms may help to explain much, if not all, of the spleen's alleged hormonal function.

Despite the obscure nature of hypersplenism itself we find it convenient to classify cases in two groups, on purely utilitarian and empirical grounds. All hemocytopenic patients "clinically" curable by splenectomy are considered cases of primary hypersplenism; those suffering from known systemic disease associated with hemocytopenia and relievable of such cytopenia by splenectomy are considered cases of secondary hypersplenism.

TABLE 1

CLINICAL CLASSIFICATION OF HYPERSPLENISM

I PRIMARY
  (1) Hemolytic Ictero-anemia — spherocytic (Familial Type of Chauffard and Minkowski)
  (2) Idiopathic Thrombocytopenic Purpura (of Werlhoff)
  (3) Splenic Neutropenia (of Wiseman and Doan)
  (4) Splenic Panhematopenia (of Doan and Wright)
  (5) Hemolytic Anemia — acquired type (of Hayem and Widal)

II SECONDARY
  (1) Lipoid Dystrophies
  (2) Chronic Infections (syphilis, malaria, tuberculosis, Kala-Azar, brucellosis,

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*Read before the Medical Society of Delaware, Wilmington, October 11, 1949. This analysis was presented in modified form by Thomas Fitz-Hugh, Jr. and John W. Frost before the American Clinical and Climatological Asso. (See Trans. Amer. Clin. & Clim. Asso. Vol. 60, 1948.)

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rheumatoid arthritis with Felty's syndrome, sarcoidosis)

(3) Disseminated Lupus, Periarteritis nodosa, etc.

(4) Amyloidosis

(5) Chronic Congestive splenomegalies (Banti's syndrome, portal cirrhosis, portal and splenic vein thrombosis.

(6) Malignant splenomegalies (Hodgkin's Disease, leukemia, lymphosarcoma, myeloma).

Why certain splenomegalic anemias fail to respond to splenectomy is one of the many mysteries. Such include Mediterranean anemia (Cooley), sickle-cell anemia and most chronic or paroxysmal hemoglobinurias. Pernicious anemia, once viewed as partly hypersplenic in nature, has of course (happily) dropped out of the splenectomy agenda.

The diagnosis of hypersplenism is, according to Dameshek[4], a problem of "correct addition": an adequate history plus splenomegaly, plus anemia, neutropenia, thrombocytopenia or pancytopenia, plus a normal or hyperplastic bone marrow "equals" hypersplenism. Doan[5] adds to this a positive response of the cells (especially leukocytes and platelets) to adrenalin. Personal diagnostic experience seems much less simple. My associates and I find it often a meticulous affair, with conflicting pieces of evidence to be weighed, and with the final proof sometimes a matter of prayerful waiting for the "expected" post-splenectomy response.

During (approximately) the past 12 years one hundred splenectomies have been performed in the Hospital of the University of Pennsylvania.

TABLE 2
RESULTS OF 100 SPLENECTOMIES

| | | Deaths | | Surviving | | | Final Score | |
|---|---|---|---|---|---|---|---|---|
| | No. of Cases | Post-op | From Disease | Good | Fair | Poor | Worth-while % | Overall Mortality % |
| **I Primary Hypersplenism** | **54** | **1** | **3** | **38** | **11** | **1** | **90** | **7** |
| Idiopath. Thrombopen. purpura | 20 | 1 | 2 | 13 | 4 | 0 | 85 | 15 |
| Hemolyt. anemia (familial) | 17 | 0 | 0 | 17 | 0 | 0 | 100 | 0 |
| Splen. Neutro. and panhematopen. | 10 | 0 | 0 | 8 | 1 | 1 | 90 | 0 |
| Hemolyt. anemia (acquired) | 7 | 0 | 1 | 0 | 6 | 0 | 85 | 14 |
| **II Secondary Hypersplen.** | **20** | **2** | **1** | **11** | **3** | **3** | **70** | **15** |
| "Banti's syndrome" | 10 | 0 | 1 | 6 | 1 | 2 | 70 | 10 |
| Miscellaneous | 6 | 1 | 0 | 4 | 1 | 0 | 83 | 17 |
| Gaucher's | 1 | 0 | 0 | 1 | 0 | 0 | | |
| Lipoid dyst. | 1 | 0 | 0 | 1 | 0 | 0 | | |
| Sarcoid | 1 | 0 | 0 | 1 | 0 | 0 | | |
| Lupus dissem. | 1 | 1 | 0 | 0 | 0 | 0 | | |
| Thallasemia minor | 1 | 0 | 0 | 0 | 1 | 0 | | |
| Tbc. of spleen | 1 | 0 | 0 | 1 | 0 | 0 | | |
| Undiag. splenomeg. with cytopenia | 4 | 1 | 0 | 1 | 1 | 1 | 50 | 25 |
| **Totals For Hypersplenism** | 74 | 3 | 4 | 49 | 14 | 4 | 85% | 9% |
| **III Non-Hypersplenism** | **26** | **6** | **0** | **20** | **0** | **0** | **77** | **23** |
| Rupture | 12 | 1 | 0 | 11 | 0 | 0 | 91 | 8 |
| Incidental (exposure) | 8 | 1 | 0 | 7 | 0 | 0 | 87.5 | 12.5 |
| Adv. cirrhosis & ascites | 4 | 4 | .. | .. | .. | .. | 0 | 0 |
| Miscellaneous | 2 | 0 | 0 | 2 | 0 | 0 | 100 | 0 |
| Hematom. cyst | 1 | 0 | 0 | 1 | 0 | 0 | | |
| Dermoid cyst | 1 | 0 | 0 | 1 | 0 | 0 | | |
| **Grand Total** | 100 | 9 | 4 | 69 | 14 | 4 | 83% | 13% |

Explanation of Table 2. All deaths listed as "postoperative" occurred in the hospital following splenectomy. Subsequent deaths "from disease" for which splenectomy was performed are listed separately. Among survivors the good results comprise patients clinically and hematologically well. The "fair" results comprise patients whose post-splenectomy status (clinical and/or hematological) is not perfect. The "poor" results comprise patients whose clinical and hematological pattern continues more or less as it was before splenectomy. In the final score the "percentage worthwhile" represents the sum of the **good** and **fair** results as opposed to the sum of the **deaths** and the **poor results.**

Omitting from further discussion group three we find 74 cases of hypersplenism and splenectomy for analysis.

HEMOLYTIC ICTERO-ANEMIA (Familial) This group comprises the best results of splenectomy — 17 cases with zero mortality and 100% "worthwhile" score. Certain atypical and diagnostically disturbing features were encountered, however. Absence of family history was found in six. In two of these both parents were examined and found to be free of all stigmata. Such cases should perhaps be classified as "acquired," but since all other features are classic they are kept in the "familial" category. The finding of hypoplastic bone marrow during a severe relapse in one otherwise typically hereditary case caused an unnecessarily guarded prognosis. This patient, a ten year old daughter of a mother whose spleen was successfully removed (for classic familial hemolytic icteroanemia during the third month of gestation) had an entirely satisfactory response to splenectomy, despite the "aplastic" condition of her bone marrow, and despite absence of demonstrable bilirubinemia, urobilinuria and reticulocytosis. This "aplastic crisis" of hemolytic ictero-anemia has been subsequently described in detail by Owren.[6] It constitutes a challenge to those who insist that normal or hyperplastic marrow is a *sine qua non* of hypersplenism. There were two patients in this group whose spleens could not be felt preoperatively. Haden reports a similar incidence of absence of splenectomy. At operation the spleens were described as "slightly enlarged" and the weights recorded as 170 and 300 grams respectively. These patients, nevertheless, presented all the other evidences of the disease, and their post-splenectomy response was perfect. This makes clinical splenomegaly also a dubious criterion for the diagnosis of hypersplenism — though, we agree, there must be strong collateral evidence available to justify splenectomy in the absence of splenomegaly, except in the thrombocytopenic type of primary hypersplenism to be discussed below, and in this category of hemolytic icterus which is usually, but not always, splenomegalic.

HEMOLYTIC ICTERO-ANEMIA ("Acquired"). This group of seven patients presents an end result which is in definite contrast to the familial group: 85% "fair", none "good" and a 14% final mortality in the "acquired" variety. Application of the relatively recent data of the Coombs Test might perhaps change the figures for acquired versus hereditary cases of hemolytic icterus in this series.

IDIOPATHIC THROMBOCYTOPENIC PURPURA. These patients, twenty in number, belong to the second historically classic group of hypersplenism (Kaznelson - 1916). The results here are good — 85% worthwhile. But the high overall mortality (15%) should be noted. Here again the criteria for recommending splenectomy are sometimes difficult to assess. Absence of demonstrable splenomegaly was encountered in nine cases (actual splenic weights recorded were from 145 to 200 grams). Obviously splenectomy in this category of hypersplenism is almost the exception rather than the rule. On the basis of our experience it is also clear that splenectomy for thrombocytopenia in patients past fifty years of age has a relatively poor prognosis (two postoperative deaths out of six such cases or a 30% mortality and a 50% worthwhile score).

Aplastic anemia, especially the megakarocytic type of aplasia, is the most difficult problem to rule out. The other major problem concerns the acute fulminating cases: when to temporize and when to operate. We usually favor conservation in acute forms of the disease. We have, however, observed several deaths from intracranial hemorrhage while "deliberations" were in progress regarding splenectomy. There is no final word of wisdom here but in general I believe, when in grave doubt, advise splenectomy, especially in cases of more than 3 months duration with bone marrow megakaryocytes present in nearly normal numbers.

SPLENIC NEUTROPENIA AND PANHEMATOPENIA. This group of cytopenias is the newest and most interesting of the primary hypersplenism disorders. The work of Doan and his collaborators is responsible for this important extension of the concept of hypersplenism and of splenectomy. Our experience (with ten patients, zero mortality and 90% worthwhile result) is unexpectedly encouraging. It must be emphasized, however, that the follow-up period is relatively short.

This group constitutes, in a sense, the essence of the hypersplenism problem. Exclusion of aleukemic leukemia and other splenomegalic malignancies, is not always easy. Similarly exclusion of progressive aplastic anemia, especially with suggestive evidence of myeloid metaplasia of the spleen, is a major problem. We have relied most decisively on sternal marrow findings and have not recommended splenectomy in this group in any patient whose marrow appeared to be hypoplastic or aplastic. We have good reason now to question this criterion, however, and to ask ourselves if we have withheld splenectomy unjustifiably in a few instances. We know that hemolytic icteroanemia of familial type may exhibit aplastic phases of bone marrow hemopoiesis, yet this disease has a "perfect score," in our experience, from splenectomy. Recently patients with Felty's syndrome have been reported with hypoplastic marrow and a good hematoligic response to splenectomy. We have had one such patient.

There is obviously great need for more precise methods to determine the magnitude of splenic myeloid metaplasia on the one hand and the functional state of the bone marrow on the other hand. I have not resorted to splenic puncture biopsy, which might help somewhat in the solution of the problem of splenic myeloid metaplasia. It seems too risky. I have felt that laparotomy and "open biopsy," (or splenectomy) would be safer. A negative adrenalin response may possibly indicate aplasia, but a positive adrenalin response does not guarantee either a functioning bone marrow or a good result from splenectomy. My associates and I have observed a strongly positive adrenalin response in myelosclerosis of leukemic type and in agnogenic myeloid metaplasia of the spleen which are, at present, two of the accepted contraindications to splenectomy. Furthermore patients with chronic or cyclical agranulocytosis, not due to drug effects or other allergenic causes, should be viewed as candidates for splenectomy regardless of the bone marrow findings provided nothing malignant is demonstrated.

The secondary hypersplenism group, as previously defined, includes a large number of diseases, the most contraversial of which is the so-called Banti's syndrome. I have retained this designation to cover patients with splenomegaly and gastric or esophageal bleeding and perhaps evidence of slight liver damage who do not fit other established categories. Many of these patients exhibit anemia, thrombocytopenia or leukopenia. The results in this group are inferior (10% mortality) but worthwhile (70%) as judged by cessation of hemorrhage and return to normal hematopoietic status and apparent arrest or reversal of liver damage. This "worthwhile score" is in contrast to the results of splenectomy in patients with obvious (admittedly advanced) cirrhosis of the liver (100% mortality).

In any case of secondary hypersplenism the prognosis of the underlying disease itself must be weighed against the hazards and possible benefits of splenectomy.

## Summary and Conclusions

1. Analysis of 74 splenectomies for hypersplenism shows a surgical mortality of 4% and a final mortality (overall) of 9% with an estimated score of 85% worthwhile results. The best results are in the groups of familial hemolytic ictero-anemia (17 patients with zero mortality and a 100% worthwhile score) and splenic neutropenia and panhematopenia (10 patients with zero mortality and 90% worthwhile score).

2. Despite practical diagnostic difficulties and theoretical deficiencies in current hypersplenism concepts the good results of splenectomy justify the hypothesis and the procedure and warrant careful extension to certain serious borderline cases of "possible hypersplenism" of both primary and secondary types. The theoretical and practical "splenectomy agenda" has been augmented and amplified by the modern concept of hypersplenism.

This concept needs revision, however, and the empirical and practical results of splenectomy will no doubt rightly dominate the clinician's decision until more dependable data are available to guide him in the "pros and cons" of splenectomy in any given case.

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## Discussion

**Dr. L. B. Flinn** (Wilmington): Having known Dr. Fitz-Hugh for a long time, I know that when Dr. Fitz-Hugh speaks there is no room for discussion. Therefore, I came prepared to recite to you a few of the cases which we have recently seen, merely to illustrate that this problem is not a problem confined to large hematology clinics, but is one of ever-pressing interest and concern here at home.

(Slide) This is a patient who may perhaps be an early Banti's. She had had her gall bladder removed some years before. She complained of weakness. The blood count was RBC, 2,200,000; Hb. 7.5; WBC 4,000. Her platelets were normal. The anemia increased. Her bone marrow showed an erythroblastic hyperplasia.

Splenectomy was performed on the 13th of August, 1947, and on the 24th her blood count had been improved. A year later it was perfectly normal and she is normal with a normal blood count today.

(Slide) This is a patient, a boy of about 19, who had had a tonsillectomy on the 25th of December. No blood count happened to have been done. He had a heart murmur at that time. Two weeks later his blood count was RBC 1,800,000; Hb. 8; WBC 5,400; Pl. 400,000; spleen, enlarged; the bone marrow again showed an erythroblastic hyperplasia.

Finally, two months later, a splenectomy was performed. He was improved for two months. He was readmitted with about as bad an anemia as before. His platelets were high. He had had many blood transfusions and recurrent bouts of jaundice, so much so that the only way it seemed possible to keep him going was to give him washed red cells. Recently he has been well without transfusions of any kind.

I do not have a current blood count, but the last report — in fact, I saw him on the street the other day looking much improved.

(Slide) Here is a patient who had had a lot of fever, was weak. There was a question at one time whether or not she might have had a multiple myeloma. Her spleen was enlarged; platelets, a little low; bone marrow, hyperplastic; megakariocytes were, if anything, increased. She had many, many transfusions. Finally, after three years, since she was running out of donors and enthusiasm, it was decided to remove her spleen which was quite large. She was better for two months, then relapsed, went home, refused more transfusions and died.

(Slide) This is perhaps a case which should not have had a splenectomy. The result was bad. When first seen, he had this blood count, but the bone marrow before this one looked more like hyperplasia than hypoplasia. His spleen was not enlarged at that time. It subsequently was, whether or not due to transfusions we don't know. He had had a transfusion every week for over two years. He was running out of donors and enthusiasm and so was his family. It was thought perhaps he might fall into this realm of aplastic stage of hemolytic anemia.

We did not anticipate the trouble we got into after splenectomy. The operation was done through a thoracic approach and he, perhaps, because of his disease, got into all the postoperative complications one can get. But it was interesting during this period that his polymorphonuclears jumped to 69 per cent, his white count to 4800 and his red count was reasonably good; his platelets up, and his reticulocytes jumped up to 3.8 for a period of about two weeks postoperative, and he died of his disease and complications.

(Slide) This was a 10-year old girl who had ecchymoses and petechiae for over a year; every evidence of thrombocytopenic purpura. The platelets were 20,000 to 50,000. Her bone marrow indicated increased megakariocytes. Splenectomy was done. She made a beautiful recovery and is well today. Pl. 87,850 two days after splenectomy; nine days later 930,-000.

(Slide) Another case of purpura in a woman of 34. Her major complaint was menorrhagia. At times her anemia, as a result of the menorrhagia, was worse than appears on this slide. Her platelets, 12,000 to 20,000. Her spleen was not palpable. Her bone marrow was consistent with thrombocytopenic purpura. Splenectomy was done. Her platelets came up very, very slowly. In fact the watch, which Dr. Fitz-Hugh described, got to be painful. She developed a slight pneumonitis at this point, with a terrific white count of 60,000, about 86 per cent small lymphocytes; but now fortunately she is well.

(Slide) This was a 56-year old woman, which is in the age which Dr. Fitz-Hugh described as being not desirable for splenectomy in thrombocytopenic purpura. She had a radical mastectomy. It was supposed to have been a simple mastectomy. The carcinoma was found at operation. The patient returned to her room and found that the operation had been a radical one.

Seven days later, ecchymoses and petechiae developed, tourniquet test of 30, bleeding time 17 minutes, no enlarged spleen, platelets of 20,000; bone marrow, moderately hyperplastic, with increased megakariocytes. Bleeding time stayed up. Platelets dropped to a point where they couldn't be counted. She took blood badly, 100 cc of blood as compatible as could be arranged; gave her a temperature of 101 with a chill. We thought we would have to do a splenectomy. She was scheduled for operation on the 19th but the blood count before operation showed that the bleeding time had dropped. The platelets went up and from then on she made an uneventful recovery.

(Slide) This was a colored female, 29, who had typical characteristics of thrombocytopenic purpura, and splenectomy was performed. The platelets were 10,000, went up to 70,000, dropped to 11,000. Here they went up to 330,000, but she kept on bleeding postoperatively. The day she died her serum bilirubin was 16. She took 5000 cc of blood postoperatively, and at autopsy puddles of blood were found and no accessory spleens.

Our experience with thrombocytopenia in the colored race has been uniformly bad. I would like to ask Dr. Fitz-Hugh what experience he has had in that regard.

These eight cases of hypersplenism have been seen recently in Wilmington. Three are cases of hemolytic anemia, all three had splenectomy, one died. One patient, who was very ill with paracytopenia, died six weeks after splenectomy. Three patients who had thrombocytopenic purpura were operated upon, two made dramatic recoveries, and one, a negro female, died. One case of thrombocytopenic purpura in a fifty-six year old female recovered without splenectomy.

Dr. D. J. Preston (Wilmington): The excellent review of splenic disease which Dr. Fitz-Hugh has presented is comprehensive and practical. He has given us a new thought, I believe, in considering certain patients with hematocytopenia, splenomegaly, and a hypoactive bone marrow, as suitable candidates for splenectomy.

Laboratory tests are the greatest help in diagnosis. Microscopic study of the bone marrow appears to offer a reliable guide in identifying agnogenic myeloid metaplasia, and it is in this group of patients that splenectomy is to be avoided. Biopsy of the spleen may be an added help in diagnosis, but I am told that there is lack of agreement among expert histopathologists regarding interpretation of these biopsy findings on both spleen and bone marrow specimens.

Dr. Cassell of Harvard Medical School has stated that in some of his patients with hypersplenism where a good effect was anticipated from splenectomy, the results were disappointing. Conversely, some whom he thought would show little improvement have obtained a good result from operation. Relief of panhematocytopenia by splenectomy in a few cases after a period of years was followed by the occurrence of leukemia. It would appear that prognosis following splenectomy is somewhat uncertain.

In congestive splenomegaly of the Banti type, lienal-renal shunt at the time of splenectomy is now considered a valuable adjunct in preventing hemorrhage from esophageal varices. Dr. Wangensteen of the University of Minnesota Medical School believes that esophageal varix hemorrhage results from acid peptic digestion and has recommended high subtotal gastrectomy in some of these cases.

Dr. Fitz-Hugh: I am going to answer Dr. Preston's question first, because I think he must have misunderstood me. We consider myeloid metaplasia of the spleen a contraindication to splenectomy. The only point that I made was that sometimes it is difficult to diagnose myeloid metaplasia of the spleen, and we have no good methods for doing so. Splenic puncture would be such a method and it is being done in certain clinics, but we have found it dangerous, and the only way I know to solve the problem, if you think you have myeloid metaplasia of the spleen but are not sure, is to open the patient up and have a small section from the spleen taken, spread it out on smears, stained hematologically, and also sectioned by the pathologist, frozen, and get an immediate report then and there. If the patient has myeloid metaplasia, the spleen looks like bone marrow, and you don't want to take out the patient's last remaining bit of bone marrow. If, on the other hand, it looks fibrotic and contains what is considered to be evidence of hypersplenism, with phagocytosis of cells, then go ahead with the splenectomy.

I am sorry, I must have given the wrong impression. I did not mean that myeloid metaplasia of the spleen is an indication for splenectomy.

I think it is quite true, though, that some of the conditions in which myeloid metaplasia may be associated with stagnation and hypersplenic effects could be submitted to splenectomy with perhaps a good result. It is a possibility that I think is worthy of consideration. If the spleen is responsible for the primary effect of exhausting the bone marrow and then becomes metaplastic itself, later, it still might be a reversible pathological process.

Dr. Flinn's cases bring back many similar memories to me. Some of his cases may have been misdiagnosed as many of mine were. We have taken spleens out of people, believing them to be idiopathic thrombocytopenic purpura on the evidence and found at autopsy later a complete aplasia, (aplastic anemia).

We have had one experience with miliary tuberculosis of the spleen and bone marrow. We operated on the patient thinking it was a case of thrombocytopenic purpura. The spleen was found to be tuberculous at the time, and at autopsy later the bone marrow was found to be tuberculous also despite streptomycin therapy.

I have operated on one Negro, very much like the one mentioned by Dr. Flinn, where we thought we had a case of thrombocytopenic purpura, only to find out later, which was denied in the history and was not picked up, that she had been receiving huge amounts of arsenicals for syphilis. She had an aplastic terminal state and died despite splenectomy.

The possible dangers and errors are always present, but in well selected cases I think our experience more or less parallels the experience of other large clinics, where a great many spleens are removed, and I think the newer ideas concerning splenectomy have extended its field of usefulness.

With regard to the specific question Dr. Flinn raised, I can't remember having had quite such a bad experience universally with colored people and thrombocytopenic purpura. I think of two, though, that died, but I can think of three that got well, just as well as anybody else, and of the two that died, one had aplastic anemia unrecognized and one had miliary tuberculosis.

## THE SIGNIFICANCE OF SINGLE, CIRCULAR LESIONS OF THE LUNG*

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Wilmington, Del.

Cancer of the lung was for a great many years considered a rare disease. Within the past few years, however, we have come to realize that it is one of the most frequent forms of malignant disease. One naturally asks why cancer of the lung was considered so rare in the past, and why today it is so commonly found. A number of reasons have been given for this increased occurrence. I shall refer to only a few of them. The first one is an aging population: more people are living into the cancer age than ever before. For example, fifty years ago, only 17% of the population of the United States was above 45 years of age; today, it is estimated that 27% now living are 45 or over. This shows an increase of 10% in the age level of our population in the past fifty years, and it is further estimated that in the next fifty years there will be 40% of the population over the age of 45. Since the peak of cancer of the lung occurs between 50 and 60 years, one can readily see that there will be a relatively higher incidence of cancer of the lung in the next fifty years than there has been in the past half century.

The question of age, I think, is a very important explanation for increase in cancer, but it does not account for all the increase.

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*Read before the Medical Society of Delaware, Wilmington, October 11, 1949.

**Radiologist, Memorial Hospital.

because malignant neoplasm in other organs of the body have not shown the same degree of increase as the pulmonary malignancies have. I think there are other factors, and one of them is the following, or second reason, namely, improved methods of diagnosis. I think this is probably the most important reason for the increase in finding carcinoma of the lung. For, undoubtedly, the widespread use of the roentgen ray and the bronchoscope have added very greatly to our ability to diagnose cancer of the lung.

These facilities are being more widely used than ever before, for the very good reason that there is an increased awareness on the part of both the doctors and the patients that the possibility of carcinoma should always be kept in mind. We now know that in the years past cancer of the lung masqueraded under such diagnosis as chronic pulmonary tuberculosis, unresolved pneumonia, bronchiectasis, chronic lung abscess, and pleurisy of undetermined origin. At present we know that, with the intelligent use of the roentgen ray and the bronchoscope, together with the help of the pathologist, the diagnosis of pulmonary cancer can be made with a high degree of accuracy.

Still another reason given for the increased incidence of pulmonary carcinoma is chronic irritation. This chronic irritation occurs in the form of various dusts during the course of one's occupation, or it can be on the basis of chronic inflammatory disease. Even the renowned pathologist, Dr. Ewing, gave credence to the thought that tuberculosis was a possible causative factor.

Due to the fact that cancer of the lung occurs about five times as frequently in men as it does in women, some authorities have thought that smoking may play a part in the predisposition to malignancy of the lung. This is because a very high percentage of men with cancer of the lung were life-long smokers. But this reason does not seem to be a very sound one, because about ninety-nine percent of all men smoke anyway, and naturally most of the cancers of the lung would be found in the group of ninety-nine percent; another thing, which I think has disproven the smoking theory, is that with the very marked increase of smoking among women there has been no increase in the percentage of cancer of the lung in women. In other words, the ratio still remains about five to one for the men.

It does seem, however, one fact is pretty well established, that with men working in mines containing radioactive substances there is a very definite increase in the number of cases of cancer of the lung, as compared to the population at large.

I should like to say a few words regarding the location of the origin of the cancer in the lung. About 75% occur in the larger bronchi, and about 25% in the smaller peripheral bronchi.

The roentgen shadow of tumors arising in the large bronchi is very much different from the shadow seen in the tumors arising in the peripheral or smaller bronchi. When the tumor is in the large bronchi the shadow we see on the roentgenogram is due first to localized emphysema, distal to the tumor, when the bronchus is only partially blocked. As the tumor increases in size and causes increased blocking of the bronchus, causing a sludging of the bronchial secretion distal to the point of block, we see what is commonly known as atelectasis. The same process occurs in the peripheral circular lesion but the bronchus in this location is so small that the localized emphysema and atelectasis is indistinguishable from the tumor mass itself, consequently, in tumors of peripheral origin the shadow we see in the roentogram is due almost entirely to tumor formation.

### Histopathology

I have just talked about the location of the tumor in the bronchi. Now, I would like to say a few words about the cell type of carcinoma of the lung. These are usually divided into three classifications: first, a squamous cell caracinoma, which makes up the largest group; second, the adenocarcinoma, occurring in the glands of the bronchus; and third, the undifferentiated cancer. Some workers believe that no matter what the eventual pattern of the tumor is, it has its origin in a multi-potential cell in the bronchial wall, and that this cell, the so-called cancer potential cell can form mucus glands, squamous epithelium, or other cellular elements, and whichever cells are in preponderance determine whether it is designated as a squamous cell carcinoma, or an adenocarcinoma, or an undifferentiated carcinoma. Others believe that squamous cell carcinoma arises in the transitional cells of the mucosa and that adenocarcinoma arises in the submucosa.

### Symptoms of Onset

Not infrequently the patient will tell you that their cough started with a recent cold, but if one pursues questioning a little further they will often bring out the fact the patient has had a dry, somewhat wheezing cough for from six months to a year. On the other hand, the coughing of blood may be the first symptom that brings the patient to the doctor. Still another very common history is that the patient has had an acute respiratory infection which has been prolonged, and does not clear up in the usual time. The carcinomas in the larger bronchi oftentimes are the source of a more appreciable hemorrhage. It can not be too greatly emphasized that even when the clinical symptoms are those of an infection, such as cough, fever, and sweating, cancer is still a possibility, because it is well known that a cancer of the lung may become secondarily infected even to the point of abscess formation, with the patient presenting all the symptoms of an acute respiratory infection, and a cancer still be the basic pathology.

In the differential diagnosis one must consider local abscess, bronchiectasis, metastatic tumor, benign neoplasm, tuberculoma, pleural plaques, and cysts.

It is not my purpose to go into detail regarding the differential diagnosis, from a roentgen point of view. I would like, however, to present our experience with lung tumors in the chest conference at the Memorial Hospital for the past two years. Aside from our own cases of lung cancer, there have been many cases from the Delaware Hospital and the Wilmington General Hospital which members of the staff have been kind enough to present before the conference and discuss the probable diagnosis and the procedures to be followed to establish an exact diagnosis. Our procedure at the Memorial Hospital Chest Group is to have the patient examined by the medical member of the group, films taken of the chest, then the patient is bronchoscoped and a biopsy specimen taken, if possible, and then sent to the pathologist for his opinion. If the lesion is beyond the view of the bronchoscope, then secretions are aspirated from the branch bronchus in which the tumor occurs. These secretions are examined under the microscope and a positive diagnosis can frequently be made by finding the cancer cell. If, on the other hand, bronchoscopic examination and aspiration of the secretion are inconclusive, then we resort to needle biopsy under the guidance of the fluoroscope. Out of 609 patients passing through the chest group in the last two years we encountered 116 malignancies. Of these, 80 were primary lesions in the lung. In further analyzing the 116 carcinomas we found 19 circular lesions, the so-called "coin lesion," in the peripheral portion of the lung, and of these 19 circular lesions 14 were primary bronchogenic carcinoma, approximately 74%. In other words, given a single circular lesion in the peripheral portion of the lung, we have about 74% chance of this being malignant primary carcinoma. I might say that this is about the average experience that other chest groups have had throughout the country, namely, between 70%

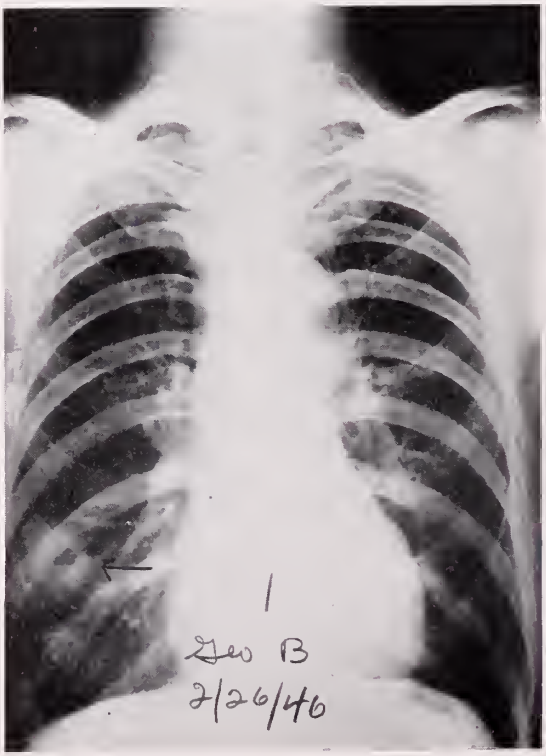

**Figure 1.** Male, white, age 69. Chief complaint: productive cough for 1 month. No fever or hemoptysis. Note cavity in center of tumor in A-P view. Pathological report: bronchogenic cancer.

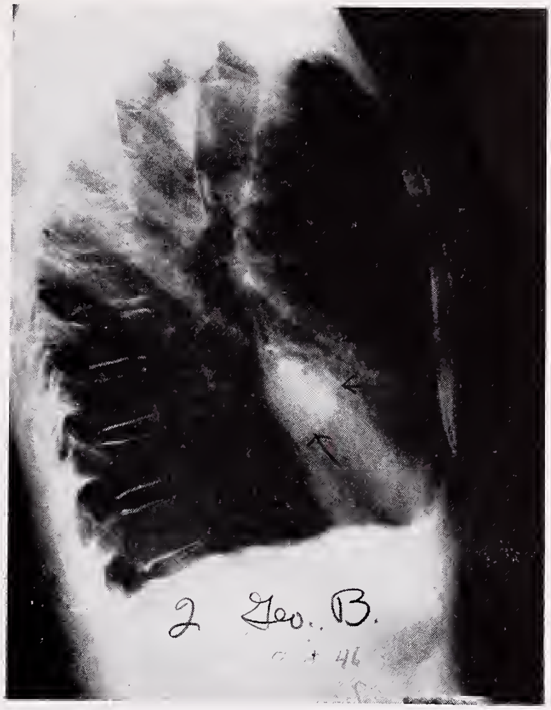

**Figure 2.** Lateral view of patient in Figure 1.

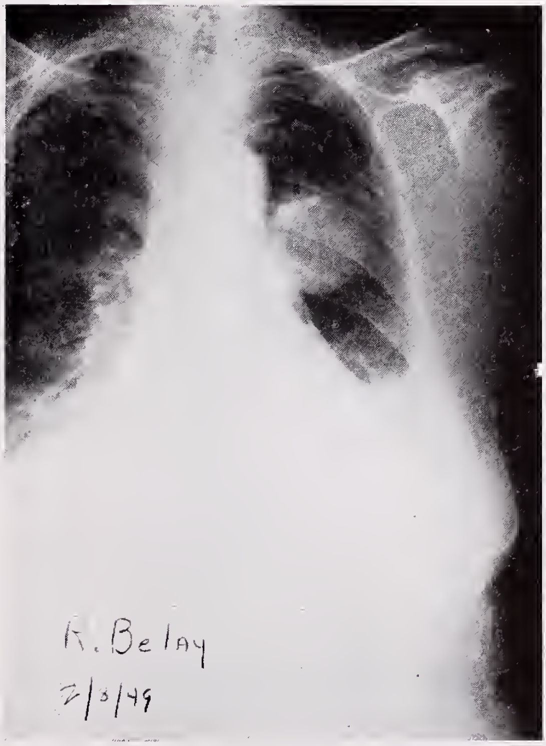

**Figure 3.** Female, white. Chief complaint: pain and dyspnoea. A-P view shows a bronchial cyst

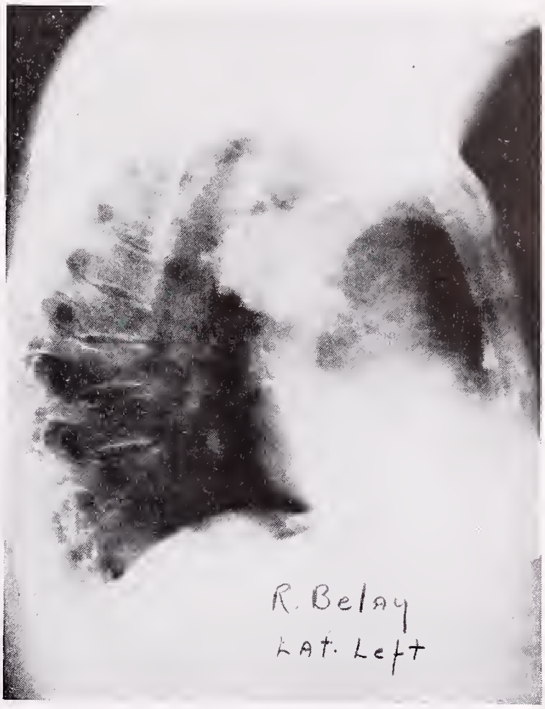

**Figure 4.** Lateral view of patient in Figure 3.

and 80% of the single pulmonary lesions are carcinoma. One can see that a high index of suspicion among the physicians regarding the possibility of carcinoma of the lung helps very materially in urging the patients to have whatever procedures are necessary to either confirm the diagnosis of cancer or to rule it out.

Among these 14 cases we had,

1 Two with positive bronchoscopic biopsies.
2 Three had positive bronchoscopic blood, or a presumptive evidence of carcinoma.
3 Two had positive bronchoscopic cells in the secretions.
4 Five had positive needle biopsies.

In other words, in 12 of our 14 cases of primary circular carcinoma we were able to make a positive diagnosis before the patient's chest was explored, and in only 2 cases did we have to do an exploratory thoracotomy to confirm the diagnosis.

## Conclusion

1. I have attempted, in a brief fashion, to give some general consideration of cancer of the lung.

2. I have presented an analysis of the cases of pulmonary malignancies coming before the Chest Group at the Memorial Hospital.
3. I have attempted to point out that it requires an exhaustive study of most of these cases to establish a proper diagnosis.
4. Lastly, given a single circular lesion in either lung, we must proceed with every diagnostic facility at our command to establish an accurate diagnosis.
5. Failing after all these studies, an exploratory operation should be performed.

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## SIAMESE TWINS
### A Case Report

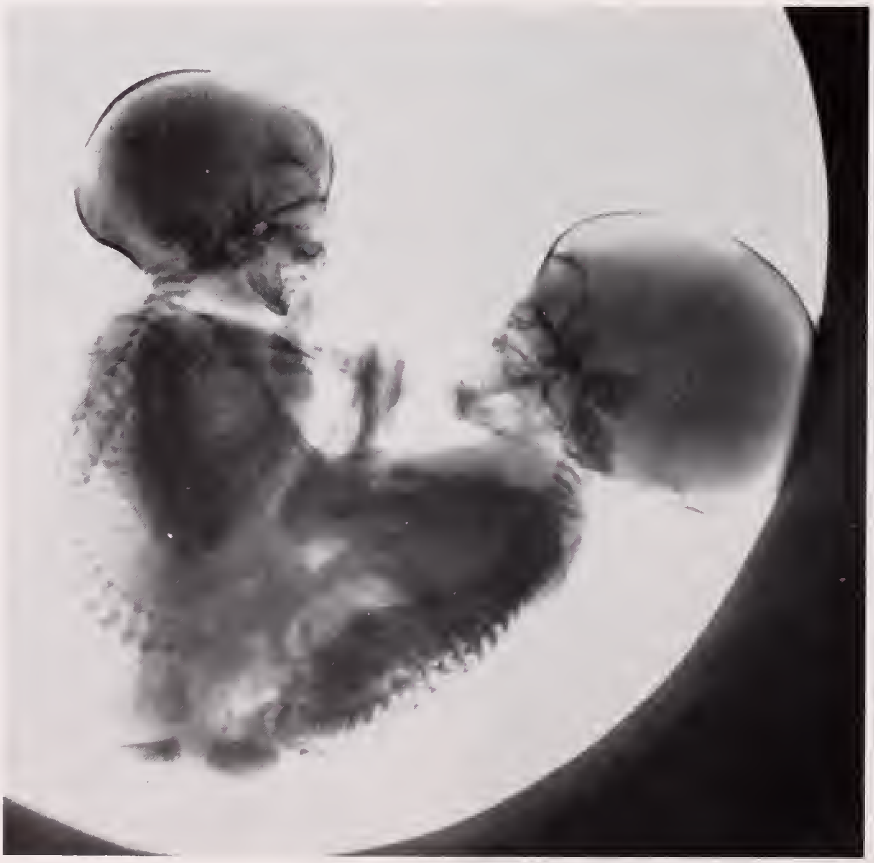
J. LELAND FOX, M. D.,
and
BRUCE BARNES, M. D.
Seaford, Del.

The following is the report of a case of "Siamese twins" delivered by a colored midwife in the rural community of Cannons, about 4 miles from Seaford. In view of the fact that the educational facilities of the patient were limited and prenatal care was meagre the report is indeed lacking in details. Autopsy permission was refused and delivery details were furnished by the mid-wife.

Maternal History — I. S.—age 24—para-V. Four previous children are living and well, with no congenital anomalies. There is no known history of twins in maternal or paternal families.

Prenatal Course—Uneventful, except that the mother suspected she would have twins. She believed she was due in about 3 weeks.

Delivery — Spontaneous delivery after approximately six and one-half hours of uncomplicated labor. The first head engaged, descended, and delivered spontaneously. The first shoulders and arms delivered without difficulty. This was followed by the trunk, a common pelvis, three legs, a second trunk, shoulders, arms, and the head of baby No. 2. There was a single placenta with one large functioning cord connected with baby No. 1,



and a second collapsed non-functioning cord connected to baby No. 2.

Description of the twins—(For the purpose of clarity the first head born will be called twin No. 1; the last, twin No. 2). Twin No. 1—Normal head, face, shoulders, arms, hands, and chest. Heart and lungs normal. The baby is crying and breathing in the usual fashion of the newborn. Just below the xiphoid process twin No. 1 is joined to the abdomen of twin No. 2. The twins have a common pelvis (see x-ray). There is but one external female genitalia, and an imperforate anus. There are three legs. Twin No. 1 apparently has one normal leg. The second leg joined to a leg of twin No. 2. This leg has four bones below the knee, and a double foot containing seven toes, the seventh toe is double. On the dorsum of the foot is an appendage which has the appearance of a finger with a nail on both sides and flexes in both directions. The third leg belongs to twin No. 2 and is normal except for a club foot.

Twin No. 2 is cyanotic, with no respirations. Heart sounds are present but consist of both systolic and diastolic murmurs. The eyes are widely separated. There is a proboscus-like nose with a hare lip and cleft palate. The shoulders and arms are normal in appearance. Twin No. 2 has an acute anterior flexion of the spine.

Duration — The twins were admitted to the Beebe Hospital and placed in an incubator. Twin No. 2 could not be made to breathe. After 12 hours twin No. 1 succumbed with anoxemia.

X-rays indicate the various bony malformations in this unusual monstrosity.

## A SIMPLE BED-SIDE TEST FOR GASTRO-COLIC FISTULA

Harold S. Rafal, M. D.,*
Wilmington, Del.

In this paper a simple confirmatory test to demonstrate abnormal gastro-colic communications is presented. It has, to the best of my knowledge, been used successfully in one case.

No search of the literature has been made to determine if it has been described in previous publications. Accordingly, no claim of originality is made even though the author has not seen or heard it described previously. In discussing this test with surgical confreres, I have not found any who had heard of it previously.

The case in which the test was successfully employed was not under the care of the writer and, accordingly, no case report is included.

Excellent discussions of gastro-colic fistula are to be found in the literature and no resume will be herein presented. A review of pertinent literature was made by the author during presentation of a case of gastro-jejuno-colic fistula in *This Journal* in April, 1946.

The test herein described occurred to me during preparation of the above mentioned case report and, with the kind cooperation of the resident staff of the Memorial Hospital, it was carried out on a ward patient who was subsequently proven to have a gastro-jejuno-colic fistula by x-ray study and by examination of the surgical specimen.

The examination requires but a few minutes. In this instance it was carried out immediately after completion of a gastric analysis.

### The Test

A Levine tube is placed in the stomach and connected to suction. The patient is given a high enema of tap water stained with dye. Indigo carmine was used in this case. The dye-stained enema fluid appeared in the stomach within seconds. Since it is impossible for enema fluid to appear in the stomach by traversing the entire large and small intestine in retrograde fashion, its appearance in the suction apparatus is definite proof of an abnormal connection between the colon and the stomach. The one other possibility would be an abnormal stoma between the distal ileum and the stomach. In such a situation the dye enema would have to pass through an incompetent ileo-cecal valve.

The test has been criticized on the basis that x-ray confirmation is still necessary, which is, indeed, a valid objection. However, it is so simple and inexpensive to perform, with no inconvenience to the patient, that I consider it worthwhile. It certainly offers confirmatory evidence.

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It may be possible that the barium mixture may not visualize very small stomas because of the greater viscosity of even dilute mixtures. If the dye test is positive and the x-ray negative, the physician's hand is strengthened to subject his patient to additional expense and inconvenience, and request that the x-ray study be repeated. I hasten to state that this is quite hypothetical and to my knowledge has not as yet occurred.

### Summary

1. A test for gastro-colic communications is described by means of promptly recovering dye-stained enema fluid from gastric washings.
2. No claim for originality of this test is made.
3. The possible advantages of the test are discussed.

#### REFERENCE

1. H. S. Rafal, M. D.: Gastro-jejuno-colic Fistula—A Case Report. Del. St. Med. Jour. 18:73 (April) 1946.

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**Committee on Fractures and Other Traumas American College of Surgeons**

# PRINCIPLES OF EARLY MANAGEMENT OF HAND INJURIES

## I. Protection of the Hand

Following injury, the hand is particularly susceptible to the development of complications leading to serious disabilities. For this reason it is important that the freshly injured hand be given the most careful protection against such complications as result from added infection, additional tissue damage and stiffening.

The principles governing the provision of this protection may be briefly stated as follows:

### 1—Protection against added infection

Any open accidental wound of the hand may be assumed to be contaminated. It is important that no additional infection be added. This requires

a. Protection of the wound at once with a sterile dressing.

b. Avoidance of putting anything into the wound, such as instruments, gauze, applicators, sponges or any sort of antiseptic.

c. If any cleansing of the areas around the covered wound is done, it should be with soap and water only.

d. Avoidance of all efforts at treatment of the wound by exploration, debridement or repair of damaged structures until adequate facilities are available. Adequate facilities for this purpose should include a location where surgically aseptic technic is employed, adequate anesthesia, proper instruments, sufficient assistance, good lighting and the provision of a bloodless operative field.

e. Application of a sterile dressing which will protect against the entrance of foreign material. Such a dressing should be voluminous, firmly applied with moderate pressure, separating the fingers from each other, and should maintain the hand and fingers in the position of function.

f. Antibiotic drugs should be administered systematically, not locally, in full dosage. Tetanus antitoxin (or toxoid) should be administered when the conditions warrant.

### 2—Protection against added tissue damage and deformity

Immobilization of the hand is required in any major injury, whether the wound involves skin, tendons, nerves, joints or bones. Immobilization should be governed by the following principles:

a. Immobilization should be employed as soon as possible after receipt of the injury for protection from further tissue damage.

b. Following definitive treatment of the injury, the immobilization should be continued as long as may be required for healing to occur.

c. Immobilization should be in the position of function (position of grasp) in order to maintain optimum relation of bone fragments and soft tissue structures.

d. The position of function in immobilization is necessary to prevent disabling deformities, contractures, muscle weakness and joint stiffening, and to insure the earliest return of usefulness after healing.

e. Flat splinting of the hand or any of its digits must be avoided at all times.

Prepared by the American Society for
Surgery of the Hand

# + Editorials +

DELAWARE STATE MEDICAL JOURNAL

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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VOL. 22 JUNE, 1950 No. 6

## ARE DOCTORS CITIZENS?

There has been plenty of evidence in recent years to suggest that some people in this country are not altogether certain of the answer to the question: are doctors citizens?

The astonishing demand from several political sources, that payment for doctors' services be made by government paymasters, is compelling indication that some people think the doctor is different from other citizens, with a different sort of civic obligation and a different sort of individual rights.

No other professional man in America — no businessman, no butcher, no plumber, no baker, no clergyman, no grocer, so far as we know — has to date been nominated to share with the doctor the dubious distinction of having his income paid by government and his product or service made "free" to all comers. It is conceivable such suggestions may come later. Certainly in the logic of socialism, a case could be argued for making the work of all these essential people a function of government.

Perhaps some day such a case will be urged. We have an idea that when it is, it will split wide open on the plumber. There is a hard core of common sense in the American people and a blunt insistence on the individual freedom of every man.

There are a good many things American citizens won't stand still for — and don't expect other citizens to stand still for either. Which brings us back to the question: "Are doctors citizens?"

*We'll know more about the answer after next November. The coming Congressional elections will give the whole country a good yardstick with which to measure the citizenship of the medical profession.*

*Is it a citizenship that influences government, a citizenship that is informed about candidates, a citizenship that means registration, voting, working for the candidate chosen?*

Or is it negative and passive when faced with the vital issues of an urgent time? Is it too busy to be concerned with the public business of democratic government?

The answer is up to every doctor. And the testing time will be the coming elections — the primaries, as well as the final races in November.

This is the time for doctors to demonstrate in action what their citizenship means in America. Conceivably, it may be the last time.

## TIME

The weekly news-magazine *Time* is read by millions; its statements are generally accepted as facts; its influence is tremendous; all the more reason why its articles and policies should not be slanted. For many years we have had the feeling that *Time,* if not definitely hostile to the AMA, could scarcely be called friendly. The editor of its department of medicine was, and presumably still is, a German, M. D., a graduate of the University of Berlin, and of comparatively recent advent into these United States. It is still possible that this neophyte among American doctors has not yet comprehended the differences between the Groman and American systems of medical practice and organization. We offer this as an explanation and not as an excuse.

That we are not alone in our misgivings about *Time* is evidenced by the following editorial from one of our exchanges:

### THE PRICE OF HEALTH

In its issue of February 20, *Time* published an article entitled "The Price of Health: Two Ways to Pay It." This purports to be an analysis of the arguments for and against the socialization of medicine. As usual, *Time* pompously cites many figures and certain statements as though they were facts and attempts in a page or two to settle the great perplexing problems of the day. As usual, also, it takes close scrutiny to determine where straight reporting leaves off and misleading or deceptive statements creep in. Artfully written, the current article is quite apt to misinform most unwary readers. Instead of clarifying the situation, *Time* succeeds only in adding to the muddled thinking which has been so prevalent on this subject.

Statement is made that the United States has "almost—but not quite—the world's healthiest citizens." Basis for the qualification is that The Netherlands, Denmark, Norway and New Zealand have lower death rates. It is well known that the crude death rate does not constitute a reliable index to the general health of any population.*

There follows an estimate of expenditures by average families, using 1944 statistics: "A family living on $500 to $1,000 a year spent $88 on doctors, dentists, osteopaths, chiropractors, faith healers, hospitals, x-rays, drugs (both prescription and proprietary), eye glasses and appliances." It is quite unnecessary to point out to a medical man the dishonesty of including all such irrelevant material in a discussion on how to pay the doctor but most readers are less discriminating. Later, the article employes the common technic of citing one case to explain the workings of a system. Here the Blue Cross-Blue Shield scheme is dramatized. The wife of a Bronx freight handler was hospitalized and operated on for acute appendicitis with complications. Her total bill was $676.56. Played down in the article was the fact that $576.56 of the bill was for nonprofessional expense since the *surgeon received the municificent sum of exactly one hundred dollars.*

The article shows confusion as to what the American Medical Association is when it says "Doctors in general agreed with (the Brookings Report) but individually did little at first to prosecute their case. This they left to the American Medical Association."

Apparently *Time* does not know or purposely overlooks the fact that the American Medical Association is synonymous with "doctors in general" in this country and, through its House of Delegates, is one of the few remaining bulwarks of true, practicing democracy.

It sneers at the campaign being waged by Whitaker and Baxter, a campaign which in last analysis is a sincere attempt to prevent the socialization of a great profession and by so doing to assist in preserving democracy for the whole country.

In its concluding paragraphs, the article includes a typical Timeism with its veiled suggestion that health insurance legislation would be yet forthcoming—"This public airing of the issue would be good for the nation's health—and its pocketbook. There was a situation which needed to be remedied. There was no doubt that with its technical and financial resources and social resourcefulness, the U. S. could find a sound remedy."

It is indeed unfortunate that a publication so widely read as *Time* should fail to discern the fundamental issues at stake in the attempt of the authoritarians to grab power. It is even more unfortunate when it confuses the thinking of its readers by failing to discriminate between professional and nonprofessional medical expense. Considering the skill with which the article has been prepared, one wonders whether it is failure or deliberation.

---

* Statistical Bulletin, Metropolitan Life Insurance Company, Volume 29, Number 5, May 1948: "The reason for the much more favorable death rate which now prevails, lies in the high proportion of people at the childhood and early adult ages, the periods of life when mortality is lowest. In time, this high proportion will diminish while the older ages will gain in relative importance. With this rise in average age, the high death rates of the later ages of life will assume increasing weight in the total mortality picture."

Editorial, *Northwest Medicine*, March, 1950

## BE JUST BEFORE YOU ARE GENEROUS

The various communities of the State, ranging from hamlets to large cities, face a serious problem of financial drainage. It is a matter of great pride to self-respecting citizens to be able to assist in the maintenance and betterment of local charitable enterprises and institutions such as district nursing associations, the local hospitals, day nurseries or child care centers, for example, as well as various local religious institutions. Latterly, it seems to be more and more difficult to raise sufficient money to keep them going, even on a restricted basis, in spite of unremitting labor by interested citizens. What are the reasons for this difficulty?

High taxes for one thing, increased cost of living for another. Yet another is the multiplicity of organizations other than local whose appeals for aid siphon away small community resources. This is to state a fact and in no way to impugn the worthiness of these larger groups. Physicians will be interested both as citizens and doctors to know why financial support is increasingly hard to obtain for local hospitals, district nursing associations, and other aids to medical practice as well as community assets.

> A check by the National Information Bureau on national nonprofit organizations, nearly all of which solicit public aid, shows an astounding number in existence.
>
> There are, for example, no less than 75 national associations dealing with public health, ranging alphabetically from those concerned with Alcoholism through Hay Fever, Parenthood, Social Diseases, and Veterans.
>
> There are 24 national organizations dealing with the problems of Youth.
>
> There are 31 which are solicitous for continuance of "Free Enterprise" and the "American Way of Life" and the like.
>
> There are five which are anxious about the American Indian Welfare, 10 concerned with Conservation, 19 aroused over Civic Affairs, 29 which deal with International Relations, 23 interested in General Welfare, and no less than 72 seeking to help on matters connected with Foreign Relief Aid and Rehabilitation, with practically every other nation in the world on the receiving end of American charity.
>
> They are not fly-by-night organizations, mind you. Every one of the more than 400 organizations listed by the bureau is either national or international in scope.
>
> They say that every dog has his day, but we doubt it for the same reason that every organization can't have its own week—there just aren't enough days and enough weeks.
>
> As it is, we defy any reader to name a week when there isn't some campaign or drive. And, from a professional viewpoint, we know there is never a day when a newspaper isn't asked to give ample space for some deserving cause.[1]

It has come to a point where drives for this and that have begun to overlap each other. It is a rare morning when the mail does not contain at least one and often two or three appeals from various sources. To the more than 400 organizations of national or international scope must be added those of less than national but not purely local character. There is, apparently, no limit.

In an expanding economy it is quite possible that all of these appeals can somehow be met, but it is to be kept in mind that the financial assistance asked is *in addition* to the steady, enormous drain through taxes to provide govermental subsidies to specially favored groups, either domestic or foreign. Matters would be much worse if any serious effort were to be made by government to reduce the national debt of some $1,700 for every man, woman, and child in the nation. It will have to be done sometime, somehow.

Meanwhile we hope that some thought will be given to a return to the time-proved maxim, "Be just before you're generous." Be sure your purely local institutions do not lack the financial assistance they merit.

Editorial, *N.Y.S.J.M.*, June 15, 1950 .

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[1] Ossining Citizen Register, April 20, 1950.

## Epileptic Clinic Opens

As part of the service offered by the Seizure Control Unit (Epileptic) of the Governor Bacon Health Center, an Outpatient Clinic service on the grounds of the Governor Bacon Health Center is now available. The hours will be from 1:15 P. M. to 3:15 P. M. every Wednesday, by appointment only. Clinic will be held in the Paynter Building.

From those who can pay a graduated fee will be requested; for patients who are indigent the service will be provided gratis.

When an electroencephalograph is desired, this procedure will be scheduled for some other day.

Dr. Joseph Hughes, neuropsychiatric consultant, of Philadelphia, maintains overall neuropsychiatric supervision and direction of all procedures and medications employed on the Seizure Control Unit.

## It Could Be Verse

Twinkle, twinkle, politician
Ply your legislative mission
Doctor all our fiscal ills
With your legislative pills.

Bury eggs and peg their prices,
Pass the pork in thicker slices,
Buy up spuds and dye them blue
If that makes good sense to you.

Ladle cash, with might and main,
Down the European drain,
Spend and Spend - it could be worse,
It only hurts me in the purse.

Build a dam or pass a pension
Just to show your good intention.
If the voters like it, shucks,
It's worth a hundred million bucks.

Tax my pay and tax my vittles,
Tax my beer and tax my skittles.
What care I if taxes rocket?
It only hurts me in the pocket.

But, my friend, please stick to bills
For treating economic ills
I crave no Senate Resolution
Which would amend MY CONSTITUTION.

*Pub. Rel. Reporter*, M.S.S.Pa., June 6, 1950

## BOOK REVIEWS

Cardiovascular Disease. By Louis H. Sigler, M. D., Attending Cardiologist and Chief of Cardiac Clinic, Coney Island Hospital; Consulting Cardiologist, Rockaway Beach Hospital and Menorah Home and Hospital for the Aged. Pp. 551 with 149 illustrations. Cloth. Price, $10.00. New York: Grune & Stratton, 1949.

The author states in his preface that this book is confined to the clinical aspects of cardiovascular disease. Throughout the text numerous references are made to his textbook on electrocardiography. In order to obtain any continuity whatsoever these books must be consulted together.

Your reviewer will not discuss the individual points of criticism. In general the material is sound. It is felt, however, that there is nothing contained in this volume that has not already been presented in other standard textbooks of cardiovascular disease.

---

A Textbook of Physiology—Originally by William H. Howell, M. D.: Edited by John F. Fulton, M. D., Professor of Physiology, Yale University School of Medicine. Sixteenth Edition. Pp. 1258, with 556 figures. Cloth. Price, $10.00. Philadelphia: W. B. Saunders Company, 1949.

This is an up-to-date text on physiology of the human body. Every system is discussed in detail giving illustrations of the theories involved and discussing the practical applications to present day medicine. A number of references are given at the end of each chapter.

The neuro-muscular systems are outlined plainly giving the modern concepts of impulse transmission, spinal reflex activity and muscle chemistry as it affects energy production. With the present day impetus given to poliomyelitis and many other neuromuscular crippling diseases, the knowledge of the physiology of nerve and muscle is imperative toward the proper understanding and treatment of these disorders. Several chapters are devoted to the principles of nervous activity, muscle, central nervous system, cerebrospinal fluid, muscular exercise, and regulation of energy storage.

The several endocrine glands and their secretions, the hormones, and their practical applications are discussed extensively.

This is a complete volume on physiology, well outlined, and the accepted theories are presented not only for the medical student but also for the general practitioner who must constantly search for the etiology of symptoms in physiological changes in the various systems of the patient.

Physiology of Heat Regulation and The Science of Clothing—Prepared at the Division of Medical Sciences, National Research Council. Edited by L. H. Newburgh, M. D., Professor of Clinical Investigation, the Medical School, University of Michigan. Pp. 457, with 78 figures and 38 tables. Cloth. Price, $7.50. Philadelphia: W. B. Saunders Company, 1949.

This highly scientific and informative book was prepared at the request of the Division of Medical Sciences, National Research Council. Its purpose was to study the climatic conditions in various parts of the world and to learn from the habits and cultures of the inhabitants how they adjusted themselves to the various extremes of temperatures. The scientific principles involved in heating and cooling sleeping quarters and the various types of clothing and shoes and the methods of wearing them for keeping the body warm or cool were carefully investigated.

The information contained in this book was compiled especially for the armed forces who discovered during World War II that their men were exposed to extremes of temperatures and climatic conditions which they were not scientifically prepared to withstand. There is a detailed description of the adaptations to climate among non-European peoples as the Eskimos, Siberians, Mongols, Chinese and the naked peoples exposed to cold, as the Fuegians of South America and the Australian aborigines.

Several chapters are devoted to the scientific methods of measuring body heat and the physiology involved in heat production and regulation. The physical properties of clothing fabrics are described. The best methods of utilizing clothing and shoes for the protection of the body against extremes of temperatures and environmental situations as wind, desert, humidity and precipitation are discussed.

From the Hills — An Autobiography of a Pediatrician. By John Zahorsky, former Professor of Pediatrics, St. Louis University Medical School. Pp. 388. Cloth. Price, $4.00. St. Louis: C. V. Mosby Company, 1949.

This is the autobiography of a pediatrician born in Hungary, brought to America at the age of six months, and who then carved out for himself, against hardships and struggles, a definite niche in American pediatrics. It is enjoyable reading and the book belongs on the shelves of those doctors who go in for medical biographies.

Essentials of Obstetrical and Gynecological Pathology. By Robert L. Faulkner, M. D., Professor of Gynecology, and Marion Douglas, M. D., formerly Assistant Professor of Gynecology, Western Reserve University. 2nd Edition. Pp. 357, with 300 illustrations. Cloth. Price, $8.75. St. Louis: C. V. Mosby Company, 1949.

The second edition of this work, which first appeared in 1938, is much fuller and better than the original. It is not encyclopedic in character or contents, as would be expected in a book entitled "Essentials"; it is, however, sufficiently complete to give a student and practioner the bulk of the information he may be needing on short notice. The illustrations are excellent and the index complete. This book will undoubtedly succeed, and be revised again before another eleven years goes by.

The Eye and Its Diseases. By 92 International Authorities: Edited by Conrad Berens, M. D. 2nd Edition. Pp. 1092, with 436 figures, 8 colors. Cloth. Price, $16.00. Philadelphia and London: W. B. Saunders Company, 1949.

This second edition edited by Berens begins with a history of ophthalmology from 2250 B. C. to date. The 92 authors who appear in this book are authorities on their subjects. The book is an excellent reference work made doubly acceptable by an exceptionally complete index. The format, with double columns to the page, makes reading easier.

An Atlas of the Blood and Bone Marrow: By R. Philip Custer, M. D., Director, Laboratories of the Presbyterian Hospital in Philadelphia; Assistant Professor of Pathology, The University of Pennsylvania School of Medicine; Consultant to the Armed Forces Institute of Pathology. Pp. 321, with 285 figures, 42 in color. Cloth. Price, $15.00. Philadelphia: W. B. Saunders Company, 1949.

This large and handsomely illustrated work is primarily an Atlas, but contains a text that adequately summarizes the material illustrated. These illustrations are three kinds, artists' drawings, black and white photography, and color photography. In these illustrations fixed sections of bone marrow predominate.

The book will undoubtedly be of great value to hematologists and pathologists.

Clinical Pathology—Application and Interpretation. By Benjamin B. Wells, M. D., Professor of Medicine, University of Arkansas School of Medicine. Pp. 397, with 32 figures. Cloth. Price, $6.00. Philadelphia: W. B. Saunders Company, 1950.

This is a small volume intended to show what tests the doctor should order in various conditions, and when, and to indicate the interpretation of the tests after they are made. Bearing in mind the tremendous increase in the cost of hospital management, the author cautions against requesting unnecessary or unsuitable laboratory work. The book includes an appendix on laboratory aids in symptom diagnosis, tables of normal values, and certain additional tests.

This book should be on the shelves of all doctors who feel the need of a ready-at-hand guide in ordering laboratory work performed.

---

How to Become a Doctor: By George R. Moon, A. B., M. A., Examiner and Recorder, University of Illinois Colleges of Medicine, Dentistry and Pharmacy. Pp. 131, illustrated. Cloth. Price, $2.00. Philadelphia: Blakiston Company, 1949.

This book includes directions on how to become a dentist, veterinarian, pharmacist, optometrist, chiropodist, occupational therapist, hospital administrator, medical illustrator and scientist. It embraces entry requirements, a list of schools, the technique of applying thereto, finances, housing, interns tips, etc. This is a sort of book that should be in every high school library and available to the student at the time when he is choosing a career.

---

Oral and Dental Diagnosis—With Suggestions for Treatment: By Kurt H. Thoma, D.M.D., F.D.S.R.C.S., Eng., Professor of Oral Surgery, Emeritus, and Brackett Professor of Oral Pathology, Harvard University. With Contributions by Henry Goldman, D.M.D., Head of the Dental Department, Beth Israel Hospital, Boston; Fred Trevor, D.M.D., Formerly Instructor in Oral Pathology, Harvard Dental School. 3rd edition. Pp. 563. with 776 illustrations, 60 in color. Cloth. Price, $9.50. Philadelphia: W. B. Saunders Company, 1949.

The thing that impresses one most with this book is its firm basis on facts and experience rather than theory. In addition to oral and dental diagnosis much medical material is included. The work contains 31 chapters, a glossary and especially selected bibliographies for each chapter. This is a very good text, which has stood the test of time since 1936.

This third edition can be recommended without reserve.

Self-Teaching Tests in Arithmetic for Nurses. By Ruth W. Jessee, R. H., M. A., Director of Nursing Education, Presbyterian Hospital, Philadelphia. 3rd edition. Pp. 122. Paper. Price, $2.00 St. Louis: C. V. Mosby Company, 1949.

The first part of this book deals with fractional quantities in measurement, in both apothecary and metric systems. The second part deals with problems in making up solutions. The work is valuable not only to the nurse in training but might be placed in the hands of prospective nurses, some of whom may be appalled at the mathematics involved, but this is the kind of applicant the hospital wouldn't want anyhow. As the student goes from part to part she encounters achievement tests and practice problems . A good book of its kind.

---

Medical State Board Questions and Answers. By R. Max Goepp, M. D., Formerly Professor of Clinical Medicine, Graduate School of the University of Pennsylvania, and Professor of Medicine, Woman's Medical College of Pennsylvania; and Harrison F. Flippin, M. D., Associate Professor of Medicine, Graduate School, University of Pennsylvania. 8th edition. Pp. 663. Cloth. Price, $7.00. Philadelphia: W. B. Saunders Company, 1950.

"Good old Goepp." His eighth edition of State Board questions and answers comes to hand like an old friend; we used the second edition of this work to help us get by the Maryland examination way back in 1911. The popular style of the earlier editions is still maintained, but they have been brought fully up to date, and psychiatric material added. Nobody needs to say a good word for Goepp — it is too well-known for that.

It is of interest to Delawareans that Dr. Goepp's eldest son, Dr. Goepp, Jr., lived at 28 The Strand, New Castle, and before his death in an airplane crash in 1946, was well-known for his inventions and work in sugar chemistry. The son died aboard a plane crash in Newfoundland while en route to Germany as an observer and research expert for the Atlas Powder Company and the U. S. Government.

Finally, we note with nostalgic regret the death on May 18, 1950 of Dr. Goepp himself, at the ripe old age of 84, in Philadelphia.

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# DELAWARE STATE MEDICAL JOURNAL

**Official Organ of the Medical Society of Delaware**
INCORPORATED 1789

VOLUME 22
NUMBER 7

JULY, 1950

Per Copy, 50c
Per Year, $4.00

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Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.

*Q. V.*

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*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

VOLUME 22
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# STEVENS-JOHNSON SYNDROME WITH PULMONARY INVOLVEMENT

George C. McElfatrick, M.D.*
Wilmington, Del.

An opportunity to observe one of the rarer syndromes of clinical medicine arises in the experience of most physicians. We feel that their recognition can be more readily possible if those who see them present them to the attention of the profession.

Stevens-Johnson syndrome, or eruptive fever with stomatitis and opthalmia, is a rare and striking entity. It is an acute condition manifested by headache, malaise, and lesions of the mucous membranes of the eyes, mouth, and urethral meatus. Duration of this condition is several days to several weeks. The exact etiology is unknown, but it is generally agreed that it should be classified with erythema multiforme.

The onset is abrupt with a temperature of 102 to 104 degrees F., headache, chill, malaise, sore mouth and throat. Vesicles then appear on the lips, buccal mucosa, tongue, and pharynx, which later become pseudo-membraneous with or without ulceration. Along with the oral and constitutional symptoms there is a conjunctivitis, rhinitis, and balanitis. In the majority of cases there are also skin lesions typical of erythema multiforme.[1]

In the cases reported in the literature only a few have stressed the association of pneumonitis with Stevens-Johnson syndrome, and the percentage of fatalities that occur despite chemotherapy. Staynon and Warner reported a series of 17 cases with pneumonitis, 14 of which were non-bacterial with an incidence of two fatalities.[2] The Commission on Acute Respiratory Diseases reports 6 cases with pulmonary lesions of non-bacterial pneumonitis.[3] Olsen et al. report a case with pneumonitis which was benefited by streptomycin.[4] Finland et al. report 4 cases with 3 fatalities.[5]

The pneumonitis of these cases is quite similar to primary atypical pneumonia in that prodromal symptoms, absence of physical signs of consolidation, x-ray features, minimal degree of respiratory distress, and absence of bloody sputum, are present in both conditions. Bacteriologic studies in cases of pneumonitis with Stevens-Johnson syndrome have failed to reveal any predominant organism, which is in support of the suspected viral etiology of this condition.

In the fatal cases it is felt that death does not result from the pneumonitis itself, but is due to obstruction of the respiratory passages, with subsequent suffocation. In cases of exfoliative dermatitis there is also desquamation of the epithelium of the trachea, bronchi, bronchioles, and alveoli. From this, it is conceivable that in Stevens-Johnson syndrome the mucosa of the tracheo-bronchial tree is involved in a vesiculo-bullous eruption identical with that seen in the mouth, and that desquamation and obstruction may occur. The degree of pulmonary involvement is apparently independent of the extent and severity of the accompanying pathology. Therapy in all cases seems to be entirely symptomatic.

Following is a case report with definite pneumonitis and survival.

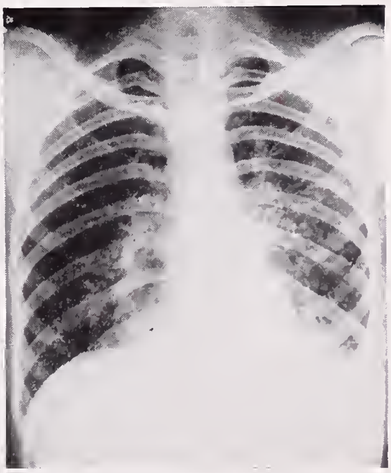

Fig. 1

X-ray of chest reveals pneumonitis similar to a typical pneumonia.

---

From the Medical Service, Fort Lawton Station Hospital, Seattle, Washington.
*Formerly Captain, M. C., A.U.S., now Resident in Surgery, Delaware Hospital.

## CASE REPORT

*M.R.*, a 19 year old white male, was admitted on 6 April 1949 with complaint of cough and pain in the chest. Symptoms started on 2 April 1949 with rhinitis, slight cough, and the usual signs of a beginning coryza. These symptoms became more severe and cough became productive of moderate amount of blood-streaked sputum on 4 April 1949. Sharp substernal pain was present for the 24 hours prior to admission. He had not been able to retract foreskin of the penis for 3 days. Past history reveals that one month prior to admission patient had been in hospital for 4 days with diagnosis of Vincent's stomatitis.

Physical examination revealed a well developed, well nourished white male lying quietly in bed in no acute distress. Temp. 101.6; P-120; R-20; lungs clear. Penis shows moderate amount of swelling of foreskin, no redness, with moderate amount of thick yellow pus exuding from around the glans. Foreskin could not be retracted to see if there were any penile lesions. Examination otherwise negative.

X-ray of 6 April 1949 showed an area of increased density in the left upper lobe 2cm in greatest diameter, with associated hilar drainage. Impression: pneumonitis, cause unknown. Rbc 4,420,000; Wbc 11,600; Hb 13.5; Differential: PMN 74; lymphocytes 20; monocytes 6. Urine: 1.030; clear; acid; albumin-trace; sugar negative; microscopic loaded with Wbc. Serology negative.

Due to continued fever and finding of pneumonitis, patient was started on penicillin 300,000 units every 3 hours on 7 April 1949 at 0900 hours. In the afternoon of 7 April 1949 patient's lips were noted to be swollen and slightly cracked, and small discrete white lesions were seen on the inside of the lips. Patient complained of some difficulty in breathing.

On 8 April it was noted that lesions were spreading throughout the mouth on buccal mucosa and pharynx, a large yellowish white plaque developed on the roof of the mouth, and there was a foul odor to the breath. Routine culture was taken of the mouth lesions which showed no predominant organisms to be present. Patient had a cough productive of moderate amounts of yellowish, tenacious sputum. Patient appeared quite toxic and lethargic. At this time it was also noted patient was developing a severe conjunctivitis of both eyes.

Civilian consultant saw patient on 9 April and concurred with diagnosis of Stevens-Johnson syndrome. It was noticed for the first time that patient had 3 small skin lesions; a 2 x 3cm. macular rash on the back opposite the 2nd lumbar vertebra, on the inner side of the left ankle, and another just above the left knee. Diphtheria culture was taken from the throat, which later proved to be negative. Patient received boric acid soaks for conjunctivitis, and normal saline mouth wash. Patient was having some difficulty in respiration, but no cyanosis was evident.

Patient showed some improvement on 10 April although there was no change in the lesions of the mucous membrane or the skin.

On 11 April it was noticed that the lesions in the mouth were not as discrete, but there was a generalized grayness of the mucous membranes of the mouth. Sputum did not appear to be as thick or tenacious. Patient had been receiving intravenous fluids since 8 April and was not able to take fluids by mouth until 13 April. Patient was started on sulfadiazine gm. 1 every 4 hours on 13 April. Penicillin was discontinued 14 April as patient still had elevation of temperature to 101 degrees. The lesions of the mouth and skin, the conjunctivitis, and balanitis all continued to show improvement, and all lesions were completely healed by 25 April. Sulfadiazine was stopped on 16 April and patient's temperature returned to normal on 18 April and remained normal thereafter.

## SUMMARY CONCLUSION

A case of Stevens-Johnson syndrome with associated pneumonitis is presented. This is an additional report of association of the two conditions in the hope that lung involvement will be watched for in these cases, and therapy instituted in the hope that a therapeutic agent for this condition may be discovered.

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# MIKULICZ'S SYNDROME

## Report of Two Cases

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In 1888 von Mikulicz described a symptom complex which was to become known as Mikulicz's disease. The disease entity which he suggested is now considered as consisting of lacrimal and salivary gland enlargement, which in most instances is painless. The histological appearance is that of intense round cell infiltration with varying amounts of glandular atrophy and interstitial fibrosis, and without epitheloid tubercles or giant cells. The enlargement may effect one, several, or all of the salivary glands and/or the lacrimal glands. The involvement may be of all gradations. Mikulicz's disease proper is considered to be benign, self-limiting, and of unknown etiology.

Since Mikulicz described his original case, many cases have been reported in the literature. In most instances one of several possible etiologic causes has been found responsible for the symptom complex. Some of the underlying causes have been progressive in nature, and a few cases have had a fatal termination. This latter group, in which an etiologic factor can be demonstrated, is correctly labelled *Mikulicz's syndrome*. The histological picture in this group is essentially the same, but giant cells and epitheloid tubercles are frequently present, and pathology can be frequently found in other organs. The syndrome, in contradistinction to the disease, is not rare in occurrence. Many of the cases originally called Mikulicz's disease on re-evalulation have fallen into the Mikulicz's syndrome group.

In 1927 Schaffer and Jacobsen[1] presented a classification of Mikulicz's disease which seems to be all-inclusive. These authors stress that the classification of Mikulicz's disease proper should be reserved for those cases in which no underlying etiologic agent or associated disease is found.

Classification of Mikulicz's disease by Schaffer and Jacobsen:

A. Mikulicz's disease
  1. Familial
  2. Mikulicz's disease proper

B. Mikulicz's syndrome
  1. Leukemia
  2. Tuberculosis
  3. Syphilis
  4. Lymphosarcoma
  5. Sarcoidosis (febris muco-parotidea subchronica)
  6. Toxic reactions
    a. Iodides
    b. Lead
    c. Arsenic
  7. Gout

Most authors agree that this classification is not entirely satisfactory. Jackson[2], Heaton and Shannon[3] have indicated three major faults: (1) the cases which have been diagnosed as familial Mikulicz's disease have been simple hypertrophy of the salivary glands. Simple hypertrophy of the glands may be not infrequent in the colored race. (2) Lead and arsenic have not been shown to be responsible factors in the production of Mikulicz's syndrome. (3) gout involving the temporo-mandibular joint has been incorrectly confused with Mikulicz's disease and/or syndrome.

The preceding classification readily indicates that the disease may be localized or a part of a generalized process; therefore, the therapy and success of therapy varies widely. Miller, Eusterman, Leddy[4] and other investigators have recorded good results with x-ray therapy; Jackson has reported a case of Mikulicz's disease proper successfully treated with penicillin. Local excision of the glands has been carried out; antibiotic therapy and iodides have yielded a good response. In the following two cases of Mikulicz syndrome penicillin therapy in Case No. 1 was followed by a remarkable response within a few days; and local excision of a lacrimal gland in Case No. 2 has not been followed by a recurrence at the date of writing, four months from the time of excision.

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### Case 1

A 34 year old colored female (A.S. #165531) was first seen in the Clinic with the complaint of blurred vision of the left eye and painful swelling of the left parotid gland of two weeks duration. She returned to the Clinic one week after the initial visit, and because her symptoms and the objective findings had markedly increased, she was admitted to the hospital on September 29th. There was a history of trauma to the left temporal area one year prior to the onset of the present episode. This was not considered to be a contributing factor to the present difficulty.

The abnormal findings on physical examination were limited to the head. There was total loss of vision in the left eye, and vision in the right eye was impaired. The left eye showed a marked degree of proptosis. The eye was fixed in a downward and lateral position. The eyelid could not be closed over the eye, and when the upper eyelid was retracted the edge of a large lacrimal gland was evident. Examination of the left eye ground revealed marked venous distention but was otherwise normal. There was slight exophthalmus of the right eye with marked puffiness of the upper eyelid. An enlarged lacrimal gland readily protruded when the eyelid was retracted. The right eye ground was normal. Both parotid glands were abnormally large; the left parotid gland was very tender to touch and the enlargement extended beyond the zygoma and below the angle of the mandible. The mouth could be opened approximately three-fourths of an inch with difficulty.

The patient was afebrile. The pulse rate and blood pressure were normal. Laboratory studies revealed: RBC 3,900,000; Hb. 76% or 11.9 gm., WBC 4,400; Polys. 59%; Lymphs. 31%; Mono. 4%. Sedimentation rate 26.0 mm. in one hour. Fasting blood sugar 90 mgm.%. The urinalysis was essentially normal. Skull and chest x-rays were within normal limits. Serology: Mazzini, positive; Kolmer-Wassermann 3 plus; Kahn standard, positive. The spinal fluid was clear, and under normal pressure. Other studies on the spinal fluid showed a two plus Pandy reaction, Wassermann 4 plus, and a colloidal gold curve 123321000.

In the presence of the symptom complex and the positive serology, it was felt that this clinically represented a Mikulicz's syndrome. A course of antiluetic therapy, with penicillin as the agent, was instituted. On the fifth day of therapy a definite response was quite evident. Vision in both eyes had returned to normal; the left eye had markedly receded from its abnormal position; extra-ocular motion was normal, and the eyelid closed with ease. The swelling in both parotid areas was considerably diminished and the left parotid was no longer tender. The patient was discharged on the tenth hospital day, and at that time there was no abnormal swelling of either parotid gland and the mouth could be opened without difficulty. Eye motion, position, and vision were normal, and the lacrimal glands were relatively normal in size.

This patient was subsequently followed in the Clinic, and had no further difficulty with vision or swelling of the salivary glands.

### Case 2

The patient, (E.W. #168152) was a 24 year old colored female. During a routine physical examination in the Clinic in May 1947, it was noted that she had puffiness of both eyelids. She was symptom free at that time. In August, 1949 attention was again drawn to the drooping and protrusion of the eyelids. She had noted excessive lacrimation from the left eye for two months preceding this examination. It was also noted that there was enlargement of both parotid glands and the right submaxillary gland. She did not complain of pain or tenderness in these glands.

The past history was significant in that she was diagnosed as having syphilis in 1946. Subsequent to that diagnosis she received 56 weekly injections of mapharsen and 30 injections of bismuth subsalicylate. In 1948 she also received a 10 day course of penicillin therapy. In 1946 a routine chest x-ray showed a fibroid type acid fast lesion in the right apex of the lung field. This lesion has remained unchanged since that time. Sputa and gastric washings have been negative for acid fast bacilli. PPD skin tests, first and second strengths have been negative.

General physical examination was normal. There was no generalized lymphadenopathy.

The spleen and liver were not palpable. Examination of the eyes revealed normal vision and normal ocular motion. Both upper eyelids protruded, and beneath the left upper eyelid there was a firm, oval-shaped mass which was non-tender. When the eyelid was retracted the mass was noted to be a greatly enlarged lacrimal gland. Similar findings were noted on the right, but enlargement of the right lacrimal gland was not as pronounced. Bilateral parotid gland enlargement was evident as well as right submaxillary gland enlargement, the glands were non-tender. Examination of the eye grounds did not reveal any abnormalities.

In January, 1950 the patient was admitted to the hospital for biopsy of the left lacrimal gland. Examination of the eyes showed that the process had been stationary over the past 5 months.

Laboratory studies: Hb. 75% or 11.9 gm.; WBC 5,000; Polys 59%; Lymph. 34% Mono. 4%; Eos. 2%; Bas. 1%. Total serum protein 8.62 gm., Albumin 5.26 gm., Globulin 3.36 gm. x-rays of the skull and hands were normal. Serology: Mazzini 4 plus; Kolmer-Wassermann, 4 plus. The urinalysis was normal.

The left lacrimal gland was excised. It was found to be extremely enlarged and very firm in consistency. Grossly, the gland was hard and the cut section was a gray-white color. Microscopic study revealed a distortion of the lacrimal gland by increased fibrous tissue, marked round cell infiltration and occasional giant cells with resulting parenchymatous destruction.

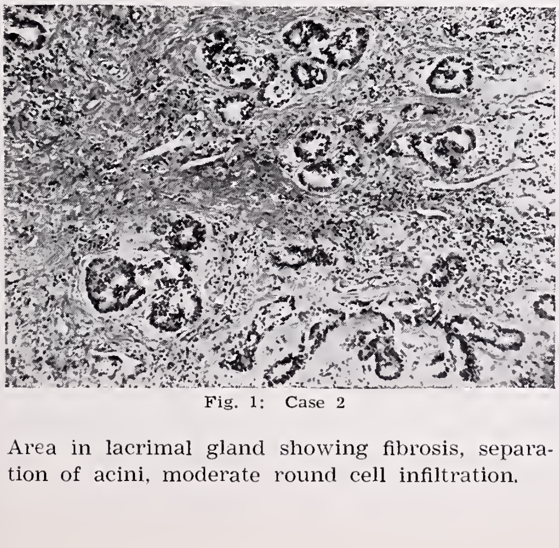

Fig. 1: Case 2

Area in lacrimal gland showing fibrosis, separation of acini, moderate round cell infiltration.

The exact etiologic cause of the glandular enlargement in this case can not be recorded with certainty in view of the presense of possibly two disease processes capable of resulting in a Mikulicz's syndrome. Further follow-up of this case may reveal the actual etiological factor. At present there has been no local recurrence.

## Summary

1. Mikulicz's disease is a rare entity, generally considered to be a benign, self limiting disease, producing painless enlargement of the lacrimal and salivary glands with a characteristic histological picture, and is of unknown etiology.

2. Mikulicz's syndrome is more frequent in occurrence and produces similar clinical enlargement of the lacrimal and/or salivary glands, but it is secondary to, or associated with, other disease processes, e.g. leukemia, tuberculosis, syphilis, lymphosarcoma, sarcoidosis, iodides. The syndrome because of its secondary causes, may terminate fatally.

3. Two cases are presented as Mikulicz's syndrome: The first which was secondary to syphilis and responded dramatically to antiluetic therapy. The second, which may be secondary to syphilis or tuberculosis, has shown no local recurrence after surgical excision of one involved gland.

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# HYPONATREMIA IN CARDIAC FAILURE

## A Case Report

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and

John H. Benge, M.D.,

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That depletion of body sodium concomitant with an insufficient cardio-circulatory mechanism effects development of tissue edema is recently an acknowledged fact. This state closely simulates the edema of cardiac failure where an excess of the same electrolyte plays a primary causative role. The clinical differentation of these diametrically opposed states is not always possible. However the deficient state is more prone to occur in the face of a low sodium diet and with the use of frequent mercurial diuretics. That it may be produced insiduously without vigorous therapy is exemplified by the following case report.

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### Case Report

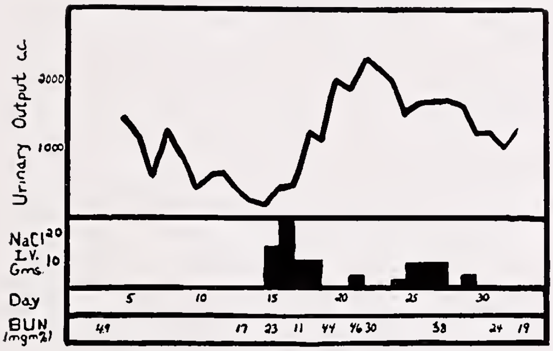
The patient, (R. McC. #169385) a white male of 50 years entered the Delaware Hospital for the first time on March 8, 1950, with the chief complaint of a severe "pressure-like" pain located substernally. The patient had been seen by one of us in August 1949 when he gave a very typical history of angina on effort for the preceding three months. An electrocardiogram at rest showed only slight evidence of coronary arterial disease, but after exercise there were definite ST changes suggesting coronary insufficiency.

His general condition improved under rest and customary therapy. Other symptoms suggested biliary tract disease, and a cholecystogram on February 20, 1950 demonstrated gall stones and a poorly functioning gall bladder. His present episode was attended by the physical findings and laboratory evidence of a posterio-septal myocardial infarction. At this point the signs of decompensation were bilateral pulmonary rales and a moderately enlarged liver. There was no pretibial edema nor pleural fluid. Therapy included sedation, oxygen, papaverine, dicumarol, bed rest and a low salt diet (2 to 4 grams daily). Gradually there developed marked pretibial edema and on March 24th he was given 1 c.c. of thiomerin and digitalis begun. This resulted in little diuresis and so on March 27th a 2 c.c. dose was given with a moderate response. The next day there developed a slight dermatitis believed to be due to bed linen. On March 31st a third dose of the mercurial was given resulting in a minimal response. The dermatitis increased and it was deemed best to discontinue the mercury. Ammonium chloride was substituted on this day in a dosage of 4.0 grams a day. During the next two weeks he improved steadily so that on discharge there was no pulmonary edema, moderate pretibial edema, a slightly enlarged liver and no pleural fluid. The dermatitis was clearing.

His urinary output was normal and a slight azotemia noted early had been reversed. As evidenced by the ability to concentrate urine, the renal status appeared good. There was a trace of albumin on one occasion. His blood pressure had become stabilized at 90/60.

While at home during the next 8 days he was at bed rest on a low salt diet, and was taking digitalis and ammonium chloride. After four days of this regime he noticed increasing dyspnea and ankle edema. He was readmitted on April 20th, 1950 in marked respiratory distress, cyanotic, with marked peripheral edema and with bilateral pleural fluid collections of minimal amounts. The hepatomegaly had increased but there were but few pulmonary rales.

In the next few days his physical status improved slightly under oxygen and with strict bed rest. His edema however progressed slowly to involve the sacral and scrotal areas and then the thorax. By his 8th hospital day he began slowly to lose ground, becoming progressively more disoriented, developing a severe cough and eventually Cheyne-Stokes respirations. On the 14th hospital day the edema had become so massive and his urinary output so low that it was decided to attempt diuresis with hypertonic glucose solution, which was given on that day. 300 c.c. of a 25% glucose solution was given intravenously and followed with 2000 c.c. of a 10% glucose solution. The patient progressed to coma under this therapy and urinary output decreased further. It was decided that further attempts to reinstate urinary flow with glucose were futile and the syndrome of salt depletion considered, although the serum sodium was only slightly below normal (129 mille-equivalents per liter). Therefore 300 c.c. of 5% sodium chloride was given intravenously. Within a few hours the patient began to arouse himself from coma and it was noted that the urinary output was increasing. In spite of the high intake of sodium chloride, the next day his chlorides and serum sodium were markedly depressed (sodium 114 mille-equivalents, chloride 460 mgm.%). Similar therapy was carried out for the next three days with the addition of a mercurial diuretic intravenously (salyrgan).



All salt therapy to the 18th day was given in a 5% concentration. From there on as normal saline

Fig. 1

His clinical and laboratory response were very satisfactory under this regime. Especially noted were the decrease in edema and increase in urinary output. His response continued for three days following cessation of therapy with salt. At this time he developed a severe monilid infection of his oral and pharyngeal cavities and refused to take oral nourishment. Electrolytes and fluids were given intravenously as seemed indicated from clinical studies from day to day. Although his urinary output remained well above normal he began to deteriorate and died on the 39th hospital day. It is interesting to note that his pulmonary fields remained remarkably free of rales until the last few days of life and stood out in sharp contrast to the other signs of edema. Pericardial friction rubs had appeared on several occasions.

Post mortem examination revealed an old posterior-septal infarction with two early septal aneurysms and multiple fresh pulmonary infarctions. The coronary vessels were each occluded by organizing thrombotic material. There were mural thrombi in the left ventricle and right auricle. The renal tubules showed a diffuse intracellular change characteristic of that seen following hypertonic intravenous therapy.[1 2]

## Discussion

Since the days of Hope, the concept of the mechanism of cardiac edema has been constantly modified to explain clinical and experimental observations. Krogh and Landis cleverly explored the role of increased venous pressure or the so-called "backward failure" theory. More recently workers have demonstrated that sodium retention due to decreased glomerular filtration which is in turn due to decreased cardiac output played a prominent part. Their work has provided the so-called "forward failure" theory. Later with the advent of modern methods of treatment a third factor, namely sodium depletion, has been shown to be capable of initiating collection of tissue fluids. Still to be investigated are the contributions of the hormonal control and physiologic state of the renal tubular epithelium.

Fishberg[3] has recently pointed out that an increasing number of cardiacs under modern therapy enter a deleterious phase associated with an impairment of renal function previously considered adequate. His cases exhibit pathologic renal tubular changes which he calls "regressive." He indicates that the cause of such changes has not been explained. Some of these patients respond to less intensive mercurial therapy and the administration of sodium chloride. In this case we found similar renal tubular damage, but feel it cannot be due to mercurials. Whether it represents changes due to hyponatremia or hypertonic fluids is not known.

The patient's BUN rose during salt therapy and immediately following diuresis but with continued fluid loss became normal. This has been reported previously. Again the cause for this is not evident. Urea has been used as a diuretic with the explanation that in concentrations exceeding maximal tubular reabsorption it "drags" water and electrolytes with it. Apparently the converse is not true.

The most interesting feature of this case was the insidious onset of hyponatremia in the absence of either marked sodium depletion from the diet or prolonged mercurial diuretic administration. A possible etiologic agent was ammonium chloride.

## Summary

A case of hyponatremia developing in a cardiac patient has been presented, with the therapy and clinical course.

The factors of the production of cardiac edema have been mentioned.

It has been emphasized how unsuspectingly

a state of hyponatremia may develop.

An unusual feature, namely, proximal tubular epithelial damage characteristic of hypertonic glucose, was associated with this case.

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# CLINICOPATHOLOGIC CASE RECORD

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and
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## Presentation of Case**

Dr. Hoopes:

This sixty year old negro man—a delivery man and shipping clerk—with the chief complaint of epigastric pain had had intermittent pain for the six weeks previous to his admission, pain spreading up and down beneath his sternum. He had the pain every day and was unable to continue work because of it. The pain was relieved for a short time by eating food but always recurred quickly.

In the two or three days prior to admission the pain was increased and a temperature elevation was noted by the local medical doctor. There had been anorexia and twenty pounds weight loss in the past month.

The past history and system review showed only some exertional dyspnea, precordial pain and palpitation during the past few weeks. No cough or edema. No nausea or vomiting. Some bright red blood in stool lately.

Physical examination revealed pulse 120, irregular. Blood pressure 85/50. Respirations 30 and temperature 100.8°F. There was opacity of the right lens. Transient rales over the right lower lobe laterally which cleared on continuous deep respiration. Heart—apical rate 160, radial pulse 120 and irregular. Systolic murmur in the mitral area. The abdomen showed marked epigastric tenderness with muscle guarding, no spasm. Most comfortable while sitting up leaning forward. Rectal examination showed the prostrate to be firm, enlarged and non-tender. Some tenderness at finger tip on upward and forward pressure.

Laboratory data: Red blood count 3.0 million; hemoglobin 9.1 gm. (58%) polys. seg. 85%; polys non-seg. 4%; lymphocytes 8%; monocytes 3%; sugar 112 BUN 27.2 mgm.%; Wassermann 4 plus; Kahn positive. The urine is turbid, dark amber; specific gravity 1.024; reaction acid; albumin plus 2; sugar and diacetic negative; 1—3 white blood cells; numerous hyaline casts; occasional epithelial cells and a few mucus threads. Febrile agglutination was negative except for Proteus OX19, 1:40.

X-ray revealed cloudiness over both diaphragms. The costophrenic angles obliterated. Both hilar shadows increased with accentuation of vascular markings fanning out from both hilar zones, especially toward bases. Trachea and mediastinum are in the mid-line. The heart shadow shows marked general enlargement. Heart measurements: oblique 18; right border 7; left border 11.1; right auricle 6.5; left ventricle 6.2; arch 7 cm. Cardiothoracic ratio 18.5 to 20. Diagnosis: general cardiac enlargement with pleural effusion of both bases and some passive congestion.

The electrocardiogram was interpreted as low voltage which is abnormal in four out of five cases and which is definitely classed as abnormal due to elevation of ST seg. in I and II. This elevation does not somehow suggest pericarditis, but it is not normal and a suspicion of that condition should be entertained. It is definitely an abnormal tracing.

There was a persistent elevation of temperature during the hospital course, often to 102° F. or above. Gradually temperature fell in two days prior to death. Patient ran a rapidly downhill course with frequent periods of disorientation. One day before death a pericardial friction rub was heard. That day he became very dyspneic and was placed on oxygen. He expired on the 5th hospital day.

## Differential Diagnosis

Dr. Chow:

In this case there are three major sites of involvement. As I see it, the problem is to determine the type of involvement in each site, if possible, and then to determine whether any or all are related. The three major sites to my mind are heart, gastro-intestinal tract, and lungs.

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*Internes, Delaware Hospital.

**Delaware Hospital Case No. 64216 presented at Staff Clinical Pathological Conference.

Let us analyze the symptoms and signs. Consider the heart first. The patient's illness started with precordial pain, palpitation, and dyspnea. In this age group the most probable explanation for such symptoms would be myocardial infarction. But it seems unlikely that this patient had myocardial infarction. Chest x-ray shows that there is pleural effusion at both bases. Pleural effusion is rarely present in myocardial infarction, and the heart is dilated to such a degree that it exceeds that usually seen in myocardial infarction unless it is associated with pericarditis. A persistent elevation of temperature to 102° and a pericardial friction rub are not present in most cases of myocardial infarction. The EKG is not suggestive of myocardial infarction. Did he have hypertensive or arteriosclerotic heart disease?

We do not know whether he had had hypertension before. If he had had it in the past of a sufficient degree and duration to result in a heart of such size, surely he would have been in severe congestive heart failure when the blood pressure dropped to 85/50. He did have dyspnea but no peripheral edema, and liver enlargement was not noted. Only transient rales were heard in the right lower lobe and cyanosis was not mentioned. In a patient with a positive Wassermann at that age, syphilitic heart disease is a possibility. We do not know whether he had been or was being treated with penicillin or arsenicals. A probability is pericarditis which could account for the sequence of most of the events recorded, notably the prolonged shifting substernal pain and the low blood pressure which could well be due to fluid in the distended pericardium impeding the entrance of blood from the great veins, thus lowering cardiac output. The increased heart rate, to 160, might be explained as compensatory for a diminished stroke volume. The pulse deficit and also the friction rub could be explained by pericarditis. The EKG pattern, furthermore, is somewhat suggestive of that condition.

To be discussed is the respiratory tract. The shifting substernal pain may have been due to pleurisy and the chest x-ray shows evidence of some pleurisy. The pain may have been due to the invasion of nerve trunks in the mediastinum or chest wall. While it is true that pleurisy very frequently jumps from one place to another, I cannot explain the shifting nature of the pain on that basis. Furthermore, the pain was not likely due to the accumulation of fluid in the chest. The x-ray shows that both hilar shadows are increased with accentuation of vascular markings. Could it have been acute passive congestion in mild form, because of an increase in pulmonary blood volume?

Pericarditis is probably never a primary disease. The six most frequent pathologic conditions with which it is associated are: (1) rheumatic fever, (2) post-pneumonic empyema, (3) pulmonary tuberculosis, (4) chronic nephritis with uremia, (5) coronary thrombosis with myocardial infarction, (6) perforating wound of the thorax. I think that with rectal bleeding however, a lesion in the G. I. tract is a better possibility.

The third major site I am going to discuss, therefore, is the gastro-intestinal tract. The bleeding could have come from hemorrhoids but it evidently occurred simultaneously with the cardiac symptoms, so I think there might be some relationship to them. At any rate I do not think the blood was coming from hemorrhoids. Could this have been peptic ulcer which is the common cause of massive hemorrhage, accounting for probably 60 to 70% of bleeding in the upper G. I. tract? I suppose that a simple peptic ulcer cannot be ruled out but such a lesion seldom perforates the pericardium; so it could hardly explain a pericarditis as well as gastro-intestinal hemorrhage. It might have been a thoracic stomach although that is very rare. The location of the esophagus posterior to the pericardium must be borne in mind. There the esophagus is normally adherent to the posterior aspect of the pericardium, it is also in contact with the pleura just before it passes thru the diaphragm. Could this have been a herniated short esophagus with an associated esophagitis, ulceration, and fibrotic change? Most cases of esophageal ulcer occur in the lower three inches of the esophagus, usually within an inch and a half of the cardia, where a perforation may be peritoneal, pleural, pericardial, or mediastinal.

The symptoms associated with abdominal type of perforation do not differ materially from those of perforation of gastric ulcer. Acute perforation above the diaphragm may produce a clinical picture suggestive of a pulmonary or cardiac catastrophe with acute severe chest pain and shock. I do not favor this diagnosis because of the insidiousness of the patient's symptoms. Could this have been a tertiery syphilis of the esophagus considering the four plus Wassermann? Such a lesion would obviously be a very remote possibility even in a known syphilitic. A more likely diagnosis would be cancer of the G. I. tract and there is some evidence that this patient had cancer. In the first place a patient in the old age group with a short history of gastric distress and recent weight loss is more likely to have a malignant condition than benign. On this basis I am slightly inclined toward cancer in the upper G. I. tract. It is difficult to make a differential diagnosis between a primary cancer of the esophagus with extension into the stomach or vice versa. Because of the lack of serosal covering of the esophagus, cancer in the esophagus is liable to spread by local infiltration. But the patient had no dysphagia, the most characteristic symptom of cancer of the esophagus. This might be explained by a cancer which did not grow intra-lumenal but did extend outside of the esophagus to the pericardium thus causing a pericarditis.

Dr. Chow's Diagnosis: (1) Carcinoma of the esophagus with extension to the pericardium causing pericarditis. (2) Syphilitic esophagitis with ulceration into the pericardium. (3) Cancer of the stomach with extension to the esophagus and perforation of the pericardium.

### Pathological Diagnosis

*Epidermoid carcinoma of esophagus with extension to pericardium. Acute purulent pericarditis.*

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# AN OPHTHALMOLOGY PROJECT IN ALASKA[*]

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This summer I was fortunate enough to be included in a project in eye research problems in Alaska. I thought that I would describe briefly the project and then show you some pictures of the eye conditions we found there, and also some of the local scenery.

The problem that we were particularly interested in was phlyctenulosis, which simply means a small blister or wart on the eye. This is usually on the conjunctiva, on the cornea, or both.

Unfortunately, in the past there never has been any work done with the Eskimos. In fact, there has never been any qualified eye man to go with the necessary equipment into the region to examine them.

The project came about through a friend of mine who was associated with me in the Army, who is now practicing in Anchorage. He had done the groundwork for the project in that he had visited practically all the Eskimo villages throughout Alaska and set up the organization for this particular project.

We were located in a little village of Sitka, which was originally the Russian capital of Alaska and is on the southeastern part of the coast of Alaska on a small island. It was formerly a naval base during the war, and after the war it was abandoned. It was taken over as an Alaskan native school.

We had approximately 350 Eskimo children there, and therefore we were able to examine all of them in a month's time, and do that much more efficiently, without transporting our equipment and so forth to all the villages.

We had associated with us four eye doctors, and a bacteriologist. We drew on the services of a tuberculosis specialist, and, in addition, the dietitian who was associated with the school. The sponsors of the project were the Alaskan Native Service and the Department of Health of Alaska.

The equipment that we required was mainly bacteriological and that necessary for the eye examination, which included particularly a slit lamp bio-microscope; also all the necessary microscopes and Petri dishes and culture media and so forth, which are quite a problem when you have to start more or less from scratch.

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[*] Read before the Medical Society of Delaware, Wilmington, October 12, 1949.
[**] Assistant in Ophthalmology, Delaware Hospital.

Also, we had special cameras to take eye pathology, and, in addition, the school furnished us with a house, and a jeep for transportation. So we were very comfortable and had an ideal location for such a project.

The etiology we were looking for, which was really the basis of the project, before we could do any treatment, was quite a formidable one. Our current thought was that it was due to tuberculosis, not a specific infection of the eye with the t.b. organism, but rather an allergy to the tubercular protein. Other possible etiologies were diet, which we more or less ruled out on the basis of the fact that most of these children had been living in the school for up to three years and had been getting an adequate diet, although, like most children, they had a great deal of candy and carbohydrates; still, we did not feel that the diet was a contributory factor to the condition.

Also, vitamin deficiencies were considered, but we could find no evidence of this etiology.

The serology was checked on every child, and without exception the Wassermann reactions were all negative. Also, we had chest x-rays on every child, and without exception there was some evidence of tubercular infection in every child. That was either in the lungs, with a healed primary lesion or an active lesion, or bone tuberculosis, or tuberculosis of the glands.

Also, we checked the tuberculin sensitivity on every child, and again without exception every one of them was positive to the first strength tuberculin, with the exception of two out of the 350 who were positive to the second strength tuberculin.

(Slide) This first slide is a map of Alaska, which shows the location of the homes of all the children, so that you can see they were well spotted from all over Alaska, from the Eleutian Peninsula all the way up to Nome and Point Barrow. Point Barrow is all the way at the top of the map and doesn't show. We were located in Sitko, the southeastern portion right about where the dot is, which was the location of the school.

This is Nome here, and Fairbanks is located here, and Anchorage is right in this region here. This is the Aleutian Peninsula.

(Slide) This shows the group that we had who made up the project. This is Dr. Fritz, who organized the project. He is now practicing in Anchorage, Alaska. I am next to him. This is Dr. Thygeron, who is another doctor with whom I was associated in the Army, who is recognized today as the world's authority on bacteriology of the eye. So he was the main sparkplug of the organization.

This doctor (indicating), you might be interested in knowing, is a resident from Duke University in eye, ear, nose and throat. This is a new experiment which is being tried out in which the residents in that service in Duke University are rotating to Alaska, spending six months there. The training which they get is really marvelous. The amount of pathology, the amount of surgery which they are able to do far surpasses anything they would be able to do at Duke in the same period of time. They get one year of training at Duke and then they get six months in Alaska, and then go back to Duke for the finishing of their service, which is another year and a half, I believe. They get all their travel expenses paid, and, in addition, they get $200 a month, which is a pretty nice salary.

The three girls were students in the school. They were all about 18, and they were of great help to us with the names and handling the children.

(Slide) This is a typical picture of one of the conditions, phlyctenulosis, in which we were particularly interested. This girl had an acute lesion in her right eye, and you may be able to just barely see the little scarring in the cornea which is the end result of previous attacks. In other words, they get an attack and it will last several months, and then it will clear up, and then it will have a tendency to recur. She had an active tuberculosis in the glands of the neck and showed positive evidence of tuberculosis in the lungs.

(Slide) This is a closeup of the same condition which shows the bulbar conjunctiva injection with the limbal vessels coming in, and in this area you may be able to recognize a grey haze, which is the scarring resulting from previous attacks of the phlyctenulosis.

(Slide) This slide shows an acute attack of the lesion, and there are two leashes of vessels coming in in this area together with some scarring from a previous attack. This particular attack was less than 12 hours old and occurred while we had been checking the girl.

(Slide) This girl is in her early 20's and is completely blind for industrial purposes. This is the unfortunate end result of the condition, for many Eskimos are industrially blind by the time they reach adulthood. In the past this has been blamed on snow blindness, but we now know that this is not true and that it is due to this condition of phlyctenulosis. This girl has less than 20/400 vision in each eye, and I think you may possibly be able to see the grey haze that is present in the cornea. She has no acute attack at the present time. The eyes are quiet, and the vascularity of the cornea is not present and therefore she will be a good candidate for a corneal transplant. When we left, this was being arranged to be done some time in the future.

(Slide) This is a close up of one of her eyes, which may show just a little better the grey haze that is present in the cornea, which is a factor that reduces the visual acuity.

(Slide) This again is another young girl. This shows a quiet eye with the corneal scarring and again an active eye on the left side. The vessels you see coming in, grow into the deeper layers of the cornea. Whenever the cornea becomes vascularized, it leaves scarring and the end result is reduced visual acuity.

(Slide) This is a picture of an acute attack, and I think you can see from the light reflection the unevenness of the cornea due to the vascularity. A normal cornea will show an even light reflection, which this eye does not do.

(Slide) This is another acute attack which has not progressed too far into the cornea but does show scarring from previous attacks.

(Slide) In determining the etiology of the condition, we were looking for any possible cause, so that in examining the children we not only examined their eyes, but also the nose, the ears, throats and any possible source of infection that might be contributing to the condition. We took cultures, both blood agar and mannitol, both of the conjunctiva of each eye and of the lids of each eye, together with the nose and any lesions such as this.

Also, as I mentioned before we did tuberculin skin test, chest x-rays, serology, and also staphylococcic sensitivity on each child.

(Slide) This is a picture of the same girl, which shows marked blipharitis. You can see crusting of the lids, and it has not affected her eyes at all. Her eyes are perfectly quiet. She has a lesion in her left nostril, too, and then she had the lesion behind the ear which we just showed. We did not feel that these lesions had played any part in contributing to the phlyctenulosis.

Also, of course, we examined the under portion of the upper lids of every eye, and just by accident we examined this child and found the typical picture of vernal catarrh, an allergy that we see very prevalent in this country but very rarely in Alaska. This was an asymptomatic condition, but it just shows the typical cobblestone appearance of the conjunctiva which results in intense itching.

(Slide) This is a tuberculin reaction on one of the patients which we did, which shows the rather marked positive reaction. We checked every one of the children for tuberculin sensitivity, and, as I mentioned before, every one was sensitive to the test.

(Slide) This shows a typical Eskimo child, which I put in to show how they do look. She has no ocular involvement. Out of the 350 children we examined, we found over 100 positive cases with no trouble at all. We were looking for 100 positive cases to study completely, and so I would judge that probably at least 50 per cent of the children did show this infection.

This girl, incidentally, has a nyphosis from a tubercular lesion, which unfortunately, is very, very common in that region with the Eskimos.

There was on this same island, in association with this project, a 150-bed tuberculosis of the bone hospital, and this particular girl had been a patient there.

(Slide) This shows the typical scenery. We were on a little island opposite the village of Sitka, and the scenery is just unsurpassed for beauty. It is typical of Norway in that there are many fjords, and the timber on the mountains comes right down to the water's edge. The mountains are snowcapped, and it is just untouched as far as the natural resources go. You may be able to see a seaplane right here in the foreground, because aviation is the only means of getting from one place to another, unless you are not in a hurry. It takes two days to get to the mainland by boat, but we could get over there in an hour by plane.

(Slide) This shows the fishing fleet at Sitka. Fishing was the main occupation of the natives, and salmon fishing played a great part in the fishing industry.

(Slide) This is one of the fishing boats along towards twilight. They are throwing out their nets to catch some of the fish. They go up to the little fjords, as the salmon run up the stream to go back to spawn to the fresh water streams in which they were born.

(Slide) This shows again a little fishing boat and it is typical of the weather which we had there. It is grey and overcast most of the time. When we did get a nice day, we would take off and enjoy the surrounding country, and then we would work all the other days. Out of the month's time we were there we had approximately three or four really nice days.

(Slide) This is a picture inside the cannery which shows the salmon. The fishermen get 35 cents a pound for the salmon, so you can understand why it costs so much, canned, in this country.

(Slide) This is added just to show the twilight. This was about 10:30 in the evening. One of the hardest things to get used to was going to bed at night and having to pull the blinds down. The first night we didn't do it and woke up about two o'clock in the morning thinking it was time to get up. There is very little night at all, and a little further north they have midnight baseball games on June 21.

(Slide) This shows another view of the airplane, which is the main means of transportation. These are marvelous pilots. They fly these little Grummans and in 17 years they have not had a fatal accident. They fly underneath the overcast, and since the overcast is usually about 500 feet, and, of course, the mountains are very much higher than that, they fly until they find a pass and scoot through. If one pass is covered over, they go to another one, and if they can't get through, they put the plane down on the water and wait until the overcast lifts. They are very, very careful and are very good.

(Slide) This shows the landing ramp at Sitka, and we were on the island in the background. The mountain behind that is a volcano mountain which is rather typical and is called Mount Edgecomb.

(Slide) This shows a fresh water lake up in the mountains which we used to hike up through, and the rainbow trout you get out of there are just terrific. Most of these fresh water lakes have never really been fished to any great extent. You can hire a plane and fly in to a lake for a day, and they will fly all the equipment. You get to waters that are just untouched as far as fishermen go.

(Slide) This shows some of the timber. The timber is green the year round, it is nearly all evergreens, and it grows to very great height.

(Slide) No trip to Alaska is complete without totem poles and these are totem poles right here in the village in which we were.

(Slide) This shows the scene in the park near the totem pole. This was one of the unusual days that we had. Unfortunately we didn't get many sunny days.

(Slide) This shows the picture from the airplane on the way home as we left Alaska. The planes scoot by the mountains, and you feel as though you could reach out and touch them.

There are one or two things that impressed me very much about the project. First of all, that you are able to conduct your practice in a town like Wilmington and then in a matter of 36 hours, you are in a far portion of the world where there are terrific needs for medical attention. Now that we have fast plane transportation, we probably could go to any part of the world and take part in such projects.

The other is the terrific need for such investigation and the need for adequate medical studies and personnel in these backward areas.

Until the doctor who organized the trip, Dr. Fritz, went to Alaska in the last year or so, there was no eye, ear, nose and throat man practicing in Alaska who was qualified to examine and study these conditions or to do any surgery.

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Dover.

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## Committee on Fractures and Other Traumas American College of Surgeons

# THE CARE OF HAND INJURIES

## II

## Requirements of Early Definitive Treatment

I The first-aid treatment of hand injuries is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. This protection is afforded by noninterference with the wound, cleanliness of surrounding areas, the application of sterile protective dressings and immobilization in the position of function.

II The general requirements for proper early definitive care are:

A—Thorough evaluation of the injury.

1—Determination of the time, place, causative agent and mechanism of the injury.

2—Determination of the nature and extent of the first treatment given.

3—Determination of infection status: whether the wound is relatively clean, grossly contaminated or with infection established.

4—General nature of the wound, i e., contusion, abrasion, burn, incised wound, lacerated wound, crushing wound, puncture wound, tooth wound, imbedded foreign body, fracture, compound fracture, amputation or combined injuries.

5—Evaluation of structural damage.

a—Degree and extent of surface injury.

b—Source of major bleeding.

c—Evidence of tendon or muscle damage by testing function *against resistance.*

d—Evidence of nerve injury elicited by testing for motor and *sensory* functions.

e—Bone and joint injury determined by x-ray.

f—Discovery and exact localization by x-ray of suspected opaque foreign bodies.

B—Adequate facilities and equipment.

1—Each hospital or clinic should have at least one surgeon who is thoroughly familiar with the anatomy and physiology of the hand and who is prepared to undertake the early treatment of its major injuries.

2—Such treatment should be rendered under strictly aseptic conditions, preferably in an operating room, with careful adherence to aseptic technic in the matter of scrubbing, draping, masking and the use of gloves.

3—An adequate supply of appropriate instruments.

4—Sufficient assistance to assure good exposure.

5—Good lighting.

6—Provision of a bloodless field by means of pneumatic tourniquet or blood pressure cuff.

7—Complete anesthesia for the patient, preferably by general anesthesia.

C—Application of appropriate treatment.

1—Thorough cleansing of a wide area around the wound with the wound protected. (Entire hand and forearm). Shaving, soap and water scrub.

2—Thorough cleansing of the immediate wound area, preferably with soap and water or a bland detergent. Antiseptics should not be used in or on the wound.

3—Careful inspection of the wound and assurance of adequate exposure, by additional incision if necessary, *closely paralleling natural creases.*

4—Thorough toilet of the wound, removing, under inspection, all foreign matter. Excision, by sharp and careful dissection, of all completely devitalized or grossly soiled tissue in the wound surfaces. It is essential that the greatest care be exercised to spare all tissues that may be viable, particularly skin, tendon, nerve and bone fragments.

5—Assurance of hemostasis by ligation of major injured vessels.

6—Repair of injured nerves by end-to-end union with fine interrupted perineural sutures. The uniting of divided digital nerves is important to future function.

7—Repair of other soft tissue injuries, where appropriate, i. e., in clean wounds of short duration, in well-cleaned contaminated wounds of not over eight hours' duration, never in wounds with established infection.

8—Reduction of fractures and dislocations, and retention in corrected position by traction or splinting in the position of function (position of grasp with wrist in dorsiflexion).

9—Application of protective dressing, fingers separated by gauze and hand immobilized to such extent as may be necessary to permit healing, in the position of function (never in the flat position).

10—Administration of antibiotics and protective antitoxin as indicated.

D—After-treatment.

1—Elevation and rest of the hand.

2—Noninterference with initial dressing for a sufficient time to permit healing, unless evidences of suppuration develop.

3—Restoration of skin coverage of denuded areas at earliest possible time. Partial thickness skin grafting is a simple and valuable means of promoting early healing.

4—Early restoration of function for nonaffected parts of the hand by directed *active* motion to the fullest extent that will not jeopardize healing of repaired structures.

5—Restoration of function in affected parts of the hand by directed *active* motion as early as is consistent with full healing and preservation of the repair of damaged structures.

Subsequent articles will deal with the particular treatment of special types of injuries.

Prepared by the American Society for Surgery of the Hand.

## RETIREMENT

The prominence recently accorded to retirement and pension plans in labor union negotiations with industry, accompanied for the most part by simultaneous demands for wage increases, brings us inevitably to a thoughtful consideration of the effect of these things upon the medical profession. For the most part, physicians as self-employers must provide for their own needs out of earnings; it is part of the price of independence.

However, provision for old age and retirement necessarily has to be made over a long period of time. During this time interval what happens to the national economy is of the greatest importance. Anyone who has tried to fill a bathtub with the drain improperly stopped is in a position to know the result, but few apparently apply the knowledge thus gained to a consideration of their future under a nationally unbalanced budget.

Deficit spending is an insidious evil, because it causes a slow and relatively unnoticed shrinkage in dollar value. When government borrows to meet current bills, its most convenient source of cash is commercial banks. The fact that they do not have the money on hand is no trouble at all. The banks merely ask Uncle Sam for some IOU's called bonds, and in return they give him a checking account equal to the figures printed on the bonds. Then Uncle Sam writes checks to pay his bills, and everybody is happy. More dollars are put in circulation, but the supply of goods that can be bought remains the same. So, every dollar in the nation loses value. "Dollars of your savings account, your salary, pension, life insurance, and bonds slowly shrivel. During World War II, such wildcat financing shrunk your dollars in half."[1]

A little thought ahead will certainly raise the question in every doctor's mind: What will my accumulated dollars be worth when it comes time for me to retire, if this shrinkage continues?

Already it has become necessary to increase social security benefits and welfare allowances to keep pace with rising costs and shrinking dollar values, and no attempt has yet been made to reduce the enormous public debt. Medical schools and hospitals are facing huge deficits unless they accept subsidy. Powerful labor union pressure is continuing for increased wages, shorter hours, pensions, welfare schemes, in spite of dwindling foreign markets for paid-for, not give-away goods. What price your savings? How long can we spend more than we make without disaster?

If you plan at some time to retire or even to continue working, give these things some thought. Coming elections afford the opportunity for every citizen-taxpayer to make his views known. Will you condone deficit spending and mounting debt by your silence?

Editorial, *N. Y. St. J. M.*, July 15, 1950.

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The health officer responsible for tuberculosis control in his area should, as an integral part of his work, develop an understanding and working relationship with the social agencies in his community. Such a relationship would certainly benefit both agencies. The social agency will gain an insight into the specialized medical and public health problems associated with tuberculosis control and the health agency will have an opportunity to see the positive contributions which social workers and social agencies can make toward the effective management of tuberculosis patients. Robt. J. Anderson, Chief. — Div. Tuberc. — Pub. Health Rep., Dec. 2, 1949.

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The great physicians of all time have understood that medicine is not a study of disease, but a study of man: an individual who is a member of a family and who is part of a community . . . . . The purpose of medicine is to make available to all the people, in the greatest possible degree, the achievements of science as they relate to the promotion of health and to the prevention and treatment of disease. W. G. Smillie, M. D., New England J. Med., January 12, 1950.

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Health education and sanatorium treatment are our two greatest weapons in fighting tuberculosis. We must remember that each patient with active tuberculosis presents a medical problem, a social and welfare problem, an economic problem and, let us never forget, a public health problem. R. D. Thompson, M. D., Bull. Nat. Tuber. A., Jan., 1950.

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[1] Release No. 117, Committee for Constitutional Government, April, 1950.

# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 July, 1950 No. 7

## Florida's Pepper Gets Salted Down

The following excerpts from John L. Lewis' magazine are quite revealing and indicative:

On the medical question, labor had better begin to think, because if resentment of the voters to National medicine in one-third of the States proves as beneficial to reactionary candidates as in the case of Smathers, the problem of repealing the Taft-Hartley Law—so long as both are linked in the Truman program—will be three times as difficult.

Regardless of how lightly President Truman may seek to brush off the Pepper defeat, the fact remains that the over-all resentment against Pepper crystallized as a result of Pepper's all-out support of the Truman program.

Pepper had to bear the brunt of all the fault-finding levelled at the Brannan Plan, foreign aid, give-away money, point four, lowering of tariffs, Government extravagance, "Commie" influence in Government, Kansas City Graft, FEPC, Repeal of the Taft-Hartley Law and, of course, National medicine.

The heretofore unorganized vote, as a result of the Truman Medical Plan, the FEPC, the raging "Commie" publicity and bitterly contested Brannan Plan, was activated into resentful political action as never before — resulting in a record vote.

In 44 years of covering political campaigns in the Nation and in many States, your editor has never witnessed such effective and productive quiet solicitation of votes as demonstrated by Florida doctors, druggists, dentists, hospital staffs, insurance companies and pharmaceutical representatives, aided and abetted by other professional men.

Funds were quietly raised. Golf matches, poker games, bridge parties and every form of contact which could be conceived and arranged were executed by the medical, drug and hospital fraternity to convince the people that epidemics would be the order of the day, plus bankruptcy, in the event the proposed Truman Medical Plan — which Pepper was supporting — was enacted into law.

Generally speaking, the people in the East, North and West look upon Florida as a State of aged pensioners in need of medical attention that they cannot afford. This is only partially true as affecting the aged. But they do not constitute an appreciable percentage of the voters.

Pepper was up against an unreasoning wall of voters on this question and the more he said in support of National medical aid the more votes he lost.

Pinellas County (St. Petersburg) is the capital of Florida's retired pensioners, yet Smathers carried Pinellas County 18,244 to 15,906 for Pepper.

In contrast to the Pinellas County vote, live-wire, horse-an-dog-racing, night-club Dade County (Miami, Smathers' home) — which Smathers said he could carry easily by 30,000 majority — was lost by Smathers, the vote being; Pepper 66,803, Smathers, 65,886, according to unofficial returns.

The labor vote showed up in Dade County, while the labor forces were soundly routed in Duval County (Jacksonville, Florida's only industrial city) — which was the fountainhead of money distribution to finance the Smathers campaign — the vote being: Smathers 42,412, Pepper 32,822.

Just how much money was spent in Smathers' behalf will never be known, but Florida campaigns in recent years have proven to be an orgy of spending.

Although the State population does not exceed 2,500,000, belated reports and confessions show that a total of more than $550,000 was spent in behalf of the successful Gubernatorial candidate in 1948 — and, in addition, a greater total was spent in behalf of the candidates in opposition.

The Smathers-Pepper campaign was of longer duration than the Gubernatorial contest and the Smathers newspaper and radio advertising far exceeded that of the campaign for governor— all of which might furnish a clue of how the money bags were loosened up in behalf of Smathers. The result would be quite interesting and enlightening if some political writer with a flare for statistics would compute the advertising expenditures of the Smathers-Pepper campaigns.

As an aftermath of the campaign, leaders of the CIO and the AFL are busy villifying each other in a name-calling contest in which each side charges the other with failure to properly support Pepper. The railroaders seem to be taking the result with complacency.

After all is said and done, a simple analysis proves that the Truman program — plus past association with "Commie" leaders — defeated Pepper.

Editorial, *United Mine Workers Journal*, May 15, 1950.

We are extremely pleased to note that such an experienced political observer as the editor of the *U. M. W. Journal* credits the physicians and other professional interests with a major part in this campaign. What Florida can do, Delaware can do, especially now that Mr. Truman has taken another walloping whack in the 249-17 defeat of his Reorganization Plan No. 27, to sneak medicine into his three-ring circus, with Oscar Ewing as the ringmaster. When will he begin to catch on?

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## SPEAK NOW . . .

*Or else hereafter, forever, hold your peace.*

In every human undertaking, there comes a time for action, a time for decision. You can describe it in the language of the marriage service, or—if you prefer—of the poker table, "Put up or shut up."

No matter how you phrase it, the alternative of such a time cannot be denied.

This year is a time of decision that requires positive action on the part of the medical profession. If this action is not forthcoming, doctors cannot reasonably complain of the consequences.

*This is a year in which the American people elect Senators and Congressmen to represent them in Washington.* Under our system of Government, it's up to every citizen to work for the success of candidates in whose views he believes. Only through *active* effort can we have *good* government.

This responsibility is now squarely before all doctors. If they are to be well represented they must work, and they must start now. Doctors, their families, their friends, all they can influence must be registered. On election day—in primary balloting and in November—it's up to the doctors to help turn out the vote—the vote for their candidates.

There is only one way to preserve American freedom—medical freedom—under our democratic process. That way is the voting way . . . the electioneering way. It's the best way ever devised, but it poses responsibilities.

They are responsibilities no doctor can afford to sidestep.

They are responsibilities that need meeting . . . now . . . today.

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## HELP WANTED

Several towns in Delaware are still in need of additional physicians, notably Georgetown, Milton, Frederica, Felton and Selbyville. In addition we are advised that Dover needs two more general practitioners and two men who would be willing to devote their work to obstetrics exclusively, as well as an EENT specialist. Georgetown is reported to have subscribed $70,000 to build a clinic, if the medical personnel were available.

This office will be glad to supply what information it has and to help establish contact between prospective physicians and these communities whenever called upon.

### Thank You, Doctor

The Medical Society of Delaware owes its thanks to Dr. John H. Foulger, Director of the Haskell Laboratory of Industrial Toxicology who represented our Society at the decennial meeting of the United States Pharmacopeial Convention, which was held in Washington, D. C. on May 9 and 10 of this year. Appointed by President Scull, Dr. Foulger attended every session of the convention, and will submit a brief report of this to the House of Delegates next October. This is the first time that Delaware has been represented at the U.S.P. Convention, so far as we know, in twenty years.

### Read This, Too

Doctor, when you peruse the advertising pages in our Journal, remember this: all ads are carefully screened—the items, services, and messages presented are committee-accepted. Our standards are of the highest. The advertisers like our Journal—that's why they selected it for use in their promotional program. They seek your patronage and your response encourages continued use of our publication. In turn, the advertisers' patronage helps us to produce a Journal that is worthwhile. When you send inquiries, tell them that you read their advertisement in the *Delaware State Medical Journal.*

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The most important factor in the development of the infant mortality rate is the standard of nutrition of the people and the most important factor in the tuberculosis rate is the standard of overcrowding. S. Leff, Med. Officer, Feb. 4, 1950 — Quoted in Am. J. Pub. Health—April, 1950.

### Excerpts From AMA Address

In a hard-hitting inaugural address at San Francisco on June 27th, Dr. Elmer L. Henderson of Louisville, Kentucky, new president of the AMA, charged that "the administrative arm of our government has failed us in this generation."

The fighting doctor from Kentucky flatly accused "little men with a lust for power" in the executive branch of the government of seeking to make America "a Socialist State in the pathetic pattern of the socially and economically-bankrupt nations of Europe."

The Administration in Washington, asserted Dr. Henderson, is "sick with intellectual dishonesty, with avarice, with moral laxity, and with reckless excesses." That condition must be changed "if we are to survive as a strong, free people" — and he called upon all of the American people to share the responsibility and to uphold the nation's ideals of freedom.

"Tonight I call upon every doctor in the United States, no matter how heavy the burdens of his practice may be, to dedicate himself, not only to the protection of the people's physical health, but also to the protection of our American way of life, which is the foundation of our economic health and our political freedom."

"American medicine has become the blazing focal point in a fundamental struggle which may determine whether America remains free, or whether we are to become a Socialist State, under the yoke of a government bureaucracy dominated by selfish, cynical men who believe the American people are no longer competent to care for themselves.

"These men of little faith in the American people propose to place all our people, doctors and patients alike, under a shabby, government-dictated medical system which they call compulsory health insurance. But it is not just socialized medicine which they seek. Their real objective is to gain control over all fields of human endeavor — and to strip the American people of self-determination and self-government.

"There is only one essential difference between Socialism and Communism. Under State Socialism human liberty and human dignity die a little more slowly, but they die just as surely!"

Then Dr. Henderson, declaring that "American medicine has led the world in medical advances, and has helped to make this the healthiest, strongest Nation on the face of the globe," blasted the critics of medicine with this significant statement:

"It is not American medicine which has failed to measure up to its obligations.

"It is not American business nor American agriculture which has failed — nor the fine, loyal working people of America who have failed.

"It is the administrative arm of our Government in Washington which has failed us in this generation!"

Stressing the fact that many already recognize the dangerous trend toward concentration of power in Washington, Dr. Henderson declared:

"If it were not for the leadership of the American press, in defending our fundamental liberties, American medicine, even now, might be socialized — and under the heel of political dictation.

"The newspapers of America, with few exceptions, have taken a strong stand, not only against socialized medicine, but against all forms of State Socialism in this country, and the doctors of America are proud to take their stand beside the fighting editors of America in the battle to save our freedom and the system of individual initiative which maintains it."

Reviewing the great achievements of American medicine at the half-way mark of the 20th Century — with 19 years added to the life span during the past five decades, with many dreaded diseases conquered, which were leading killers at the turn of the century, and with the maternal death rate in this country now lower than in any other nation — the A.M.A. president commented:

"The story of never-ending medical progress in this country is not just a story of so-called miracle drugs and miracle discoveries. The real miracle of American medical progress is the miracle of America itself — the motivating power of the American spirit, of free men, unshackled, with freedom to think, to create, to cross new frontiers.

"This is the spirit, and these are the very methods, which government-domination of medical practice would destroy."

Declaring that the nation's medical care problems can be resolved "without compulsory payroll taxes and without political pressure," Dr. Henderson pointed out that approximately half the population of the country already has enrolled in voluntary health insurance plans "to take the economic shock out of illness."

"Within the next three years, in the opinion of leading medical economists, 90 million persons will be enrolled in the voluntary prepaid medical plans — and when that number has been reached, the problem will have been largely resolved."

Dr. Henderson concluded his address by thanking the American people for coming to medicine's defense when it was brought under attack — and reported that more than 10,000 national, state and local organizations, with many millions of members, have taken positive action against compulsory health insurance.

---

The hospital is a key location in which to conduct a case finding program. Many of the related factors of tuberculosis control such as nutrition, economic distress and social maladjustment are receiving constant study and attention, but the basic solution remains one of action in mass case finding, diagnosis and treatment. The Importance of the Hospital as a Tuberc. Case Finding Center — Hospital Council of Greater New York and New York Tuberc. & Health A.—1950.

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One of the most persistently discouraging facts about cancer of the lung, is the long interval of ten months that elapses, on the average, between the patient's first visit to the doctor and the time when the diagnosis is made. Overholt, R. H., and Schmidt, I. C., New England J. Med., Nov., 1949.

## OBITUARY

### Samuel C. Rumford, M. D.

Dr. Samuel Canby Rumford, 73, retired physician and member of two of Delaware's best known families, died on June 29, 1950 at his home in Wilmington after a long illness.

One of the most prominent physicians in Wilmington for many years, Dr. Rumford was born July 23, 1876, at 1401 Market Street, long known as the old Canby Home, now the site of the Brown Vocational School. He was a son of Charles Grubb and Elizabeth Canby Rumford.

After attending Friends School here, Dr. Rumford attended the Penn Charter School in Philadelphia, and was graduated from the University of Pennsylvania in 1899, and from the Medical School of the University of Pennsylvania in 1902.

After serving his interneship at St. Agnes Hospital in Philadelphia, Dr. Rumford opened practice at 1403 Market Street, and continued practice in medicine and surgery until he retired about 10 years ago.

For 15 years before retiring Dr. Rumford served as medical director of the Continental Life Insurance Company of Wilmington. He served for many years on the staff of the Delaware Hospital.

Dr. Rumford was a former member of the Medical Society of Delaware and of the New Castle County Medical Society. He was also a member of the Society of the Fine Arts and of the Society of Natural History of Delaware, and was interested in the Society of Friends.

Surviving Dr. Rumford are his wife, Mrs. Beatrix Tyson Rumford; a son, Lewis Rumford II of Baltimore; a brother, Lewis Rumford of Wilmington, and four grandchildren, Beatrix Tyson Rumford, Ellen Ellsworth Rumford, Elizabeth Clymer Rumford, and Lewis Rumford III all of Baltimore.

The funeral took place from the home on July 1st, with interment private.

## BOOK REVIEWS

A Textbook of Surgery by American Authors. Edited by Frederick Christopher, M. D., of Surgery, Northwestern University Medical School. Pp. 1550, with 1465 illustrations of 742 figures. Cloth price, $13.00. Philadelphia: W. B. Saunders Company, 1949.

We welcome the new fifth edition of Christopher's well known and favorably received book. This edition contains a complete revision of the previous text, written by 198 American authorities with Dr. Christopher as editor and co-ordinator. The book represents practically all phases of American surgery, including orthopedics, urology and gynecology.

This is one of the best one-volume texts in this country, and we recommend it highly.

### Harofe Haivri

The appearance of Volume 1, 1950 of the *Hebrew Medical Journal* (Harofe Haivri), inaugurates the 23rd year of its publication under the editorship of Moses Einhorn, M.D.

Written in Hebrew, with English summaries, the *Journal* contributes to the development of Hebrew medical literature, and the newly established Hebrew University-Hadassah Medical School.

The current number contains a symposium on various phases of disease and health in Israel. Among the articles of interest are "Orthopedic Problems in Israel" by I. Pulvermacher, M.D.; "Fighting Deafness in Israel" by Ahron Schwarzbart, M.D.; and "Kupat Holim—The Labor Health Service in Israel" by Moshe Rabinowitz, director of Kupat Holim in Tel Aviv.

In the section on Bible and Medicine, Dr. C. Genazzani presents a unique essay on "Pathological Symptoms Caused by the Famine During the Siege of Jerusalem by Nebuchadnezzar, King of Babylon." In the section on Old Hebrew Medical Manuscripts, Dr. Zussmann Muntner of Jerusalem presents a historical article on "Ascites—A 10th Century Manuscript" by Yizchak Ben Shlomo Ha-Yisraeli. Under the heading of Personalia are presented biographical sketches on the life and works of Professor Hermann Strauss and of Dr. Howard Lilienthal, noted American surgeon.

For more information write to the *Hebrew Medical Journal,* 983 Park Avenue, New York 28, N. Y.

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# DELAWARE STATE MEDICAL JOURNAL

**VOLUME 22**
**NUMBER 8**

**AUGUST, 1950**

**Per Copy, 50c**
**Per Year, $4.00**

DOVER, OCTOBER 2-4, 1950

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*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

VOLUME 22
NUMBER 8

AUGUST, 1950

Per Copy, 50c
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# NEW STATE FACILITIES FOR CRIMINALLY INCLINED PSYCHOPATHS IN DELAWARE

M. A. Tarumianz, M. D.,*
Farnhurst, Del.

For the opening of my subject I borrowed a sentence from Mark Twain: "He made me like him, and did it without trouble, he made me better satisfied with myself than I had ever been before."

Science as a whole has created many new facilities for man's comfort and pleasure. It has established new criteria for human existence, including better education, health, housing and so forth. Yet, with all these progressive and useful facilities of life, men have not reached the goal of their purpose in life. The greatest desire of the individual is happiness within himself and in his environment. Such happiness can be achieved only through knowledge of oneself and his surroundings. It is true that modern psychology and psychiatry have contributed the necessary tools for such a knowledge and understanding. Nevertheless, if we look realistically at the present statistical data, we should disagree with optimistic views of politicians and those who wish to blindfold us with secondary tools for happiness, and should become concerned and pay more attention to an integrated research for human happiness.

According to the statistics the estimated number of psychiatric cases in the United States is close to 9,000,000 and there are approximately 700,000 mentally ill in public mental hospitals. There are approximately 200,000 new patients who are admitted to psychiatric hospitals yearly; there is one divorce out of every three marriages and approximately 2,000,000 juvenile crimes committed yearly. 200,000 die yearly or become totally disabled due to accidents and 900,000 are partially disabled. There are about 6-7,000,000 who are alcoholics. The cost in disease, crime, property damage directly due to alcohol equals to $750,000,000 annually.

Crime has never been properly understood, possibly because it is so difficult to be dispassionate in our consideration of it. probably due to our emotional reaction when anyone interferes with our individual rights or with the rights of the society in which we live. In spite of the fact that it has been quite definitely proven that punishment does not ameliorate the situation, we still consider it the proper procedure. Karpman considers crime a search for a fuller expression in the life of the ciminal, no matter how aberrant. Therefore it would seem that it should be understood and not condemned. Although much literature has been published about the criminal, it has mostly dealt with his intellectual ability rather than with the motivation behind the crime and the etiological factors which arouse the motivating force.

Statistics in regard to crime are difficult to obtain, as are all statistics which deal with a geographically widespread and an economically varied society numbering many millions of people. Many of the offenses against the law, particularly those of a minor type, are not reported. Often the criminal is not apprehended. As a simple example we may question how many people pay blackmail because of fear of exposure, should they seek the aid of the police? How many people refuse to report a crime because it is committed by a relative or a friend whom they hesitate to report? How many sexual offenses are committed and not reported either because the act is mutual or because of a feeling of shame?

The average citizen is content to relegate his responsibility and participation in crime to duly authorized agents of the law, however, this is merely a surface phenomenon. In the average person who is a victim of a criminal act, rage is the earliest reaction after the crime is committed. This reaction is accomplished by an impulse toward revenge in kind. Later on this reaction subsides and is replaced by conviction that the law will eventually achieve retribution for wrongs inflicted.

---

*Superintendent, Delaware State Hospital and Governor Bacon Health Center, Director, Mental Hygiene Clinic, and State Psychiatrist.

A criminal is a man who is unable to subjugate his personal desires for the good of society. This inability to withhold the realization of personal desire until some future date, or to give it up entirely for the welfare of the group, may be considered an abnormality and is a primitive reaction to life situations. There are several methods through which this satisfaction can be obtained and these are the situations under which crime is committed. The method of obtaining these personal methods may be through passion with an intense emotional reaction and rapid commitment of the crime; through impulse with rapid commitment of the crime without intense emotion; or through premeditation during which there is practically no emotion and a carefully thought out plan of activity. When a personal desire is not realized, there is often present a strong emotional coloring unless the forces behind this desire are sublimated and thus releasing the pain through some substituted field of activity. Probably the strongest emotion which plays an important factor is fear, an emotion which almost invariably demands an immediate release. Will-to-power is probably the precipitating factor to some degree in those crimes in which premeditation plays an important role.

One must be careful to differentiate fear from terror, since fear may be a prolonged reaction sometimes lasting throughout the life of the individual, the individual at times being barely aware that he is suffering from a destructive emotional reaction. In early times it merely involved the physical life of the individual but with the advancement of our present economic and cultural civilization, it has assumed a much wider range of importance, involving the loss of personal property, prestige, social relationships and all factors which are necessary to maintain a given position in life. There may be also involved a fear of not being able to obtain one's ideals, ideals which may change with every decade of life. Crimes committed by the mentally ill are based on the same fundamental factors, but in the mentally ill the behavior is activated by a false premise in no way acceptable to existing facts.

The law recognizes the force produced by fear when self-protection becomes necessary only in its most primitive form, that is, self-protection against bodily harm or against property rights and then only when the situation at the moment allows for no other means of self-defense than actual assault. Could cold and hunger be eliminated from our social life, a small percentage of crime would become a matter of past history; unfortunately simple adequate food and warmth is not all that is considered essential for adequate living.

It is true that persons begin life with certain inherent traits, and tendencies. Given a normal physical body, an individual life is composed of psychological traumas when anything occurs in the life pattern which radically differs from the average pattern. It is entirely within the realm of possibility that the process of being born is an important psychological event in the life of the child. The mere process of birth is the first human important experience which the organism must meet and it is accompanied by a certain amount of physical discomfort. After birth, the child must perform, without aid, certain primitive acts in order that life may be sustained. Instinctive and reflex as these acts are, they are, nevertheless, a vital change in the life pattern. From our present knowledge, we know that we have at birth a living mass of protoplasm which can be markedly affected by its environment and which is exceptionally imitative and suggestible. We cannot definitely state which characteristics are inherited and which are not. We do know that certain physical traits are present which have been definitely transmitted from the parents and we are reasonably sure that the degree to which a child may be developed intellectually is also present. Beyond this all factors of inheritance are more or less theoretical. In view of this fact, it is entirely possible that the child's adult behavior depends largely upon its early environment.

It has been said that in the first ten years of life lie the origins of the habit of thinking, feeling, and acting. In considering this factor, the importance of the individual who is raising a child cannot be overemphasized. Individual training and education, the aim of which would be to adapt the individual to live harmoniously in any social group or system, would be the only solution to our problem. Education, beginning in early childhood, with the aim of developing a respect for the individual as well as property rights of others, with an early understanding of the individual of his own possibilities and limitations, and with the elimination of all factors which may cause starvation or actual physical hazards due to lack of necessities, should help to produce a sense of security among the people with its accompanying contentment with life, and should help eliminate some of the factors which cause fear and thereby lessen the number of antisocial acts.

Eliminating those factors, the deprivation of which strike at the very fundamentals of life, we still have a large group who commit crimes for no apparent reason. The anthropological factors in criminals differ in no material way from those of the population as a whole. What manner of man then is the criminal who refuses to follow the natural order of society and who is not deterred by the severity of punishment? How can we adequately explain the fluctuations in crime which appear at various intervals? Are these fluctuations local, national or international? Are they based on group psychological aspects caused by national or world economic or social forces? These questions it seems to me are still to be adequately answered.

Again I repeat that the only solution which I can see, and this solution is only partial, is to educate the individual from early childhood to appreciate the fact that he must of a necessity live in a group, that his ultimate good is obtained by following the laws which seem to be best for the welfare of the majority of the group and that to adjust in society as a whole he must develop certain inhibitions and sublimate certain desires the realization of which will be contrary to those mores which the group has set up as being essential for society's highest development. He must learn that primitive behavior is not acceptable and is not compatible with his own welfare in our present social standards. He must also realize that the postponement of realizations of natural desires produces a far greater reward in our present civilization than immediate realization. This education of the individual must start at early childhood. It is essential that the early emotional life of the child should be normal and should develop equally with his physical life. The child-parent relationship should be that of protection and mutual respect, with a gradual training of the child which enables him to break away from the family group and become an individual who is self-sustaining in a social manner. Throughout early life the child should have a sense of security so that the emotion of fear does not become habitual. Such a task is tremendous and we can only ask whether at an early age we can recognize a condition which may be characterized as a predelinquent state. It is probably that state in the development of the individual, whether a child or an adult when inadequate or abnormal emotional reaction is noted. If this reaction is abnormal we are probably dealing in many cases with a psychopathic or prepsychotic individual.

The classification of ''psychopathic personality'' is vaguely defined. He can be described in terms of his internal characteristics. One of the most important characteristics of the psychopath is the inability to achieve a goal. Other basic psychological characteristics are his outstanding egotism, impulsiveness, resistance to discipline and training. The psychopath takes things for granted and thinks only in terms of personal advantage. He is unable to stand adversity and his goals are in terms of short lived values and his judgments are unreliable. He is usually very untrustworthy. He always lacks insight into his own difficulties and projects blames for his troubles to others.

With such a background and personality the psychopath is very frequently in contact with the law, usually for relatively minor offenses and infrequently for serious crimes. In the group of ''psychopathic personalities'' are included pathological liars, swindlers, moral degenerates, sexual deviates, paranoid and emotionally unstable personalities, habitual criminals, sadistic personalities, etc. The treatment of this group has been taken over by legal authorities, with the consequence that there is no treatment, but only punishment. These persons are ill, just as is the psychotic patient; and the habitual sick person may have a recoverable and sometimes an incurable illness, the true nature of which can be determined only by proper hospitalization. Unfortunately in the past, the psychopathic individuals have been treated just as unintelligently as were the psychotics in the middle ages.

If there is a primary defect in the constitution of an individual, then the case is seemingly hopeless, but not actually so. These patients often times adjust themselves in properly controlled environments. However, the individuals, who have the guidance and care of such persons, should be understanding, firm, and well-trained personnel; thus any emotional outbreaks can be quickly handled without the use of force or punishment. It is difficult, however, to decide whether the psychopathic trait is the result of a constitutional defect. Surprisingly, there are many psychopathic persons who can be assisted in adjusting to their environments after prolonged proper care and treatment in a controlled environment.

Another group of criminals, who comprise probably a greater number than realized, are those who are psychotic or in a pre-psychotic state. Far too little study has been made regarding the criminal tendencies of the mentally ill. As a result some of the crimes that were considered to have been committed in the so-called pre-psychotic state, actually may have been committed during the early days of the disease process. It has been stated that the psychosis removed inhibitions which prevented the individual from carrying out underlying criminal tendencies. This is well-demonstrated in the cases of murder resulting from a paranoid reaction. Even today the many paranoid individuals who live in communities are always a potential danger. Their psychotic behavior has been noted for years and they are thought to be harmless. A few cases have been tried and sentenced for felony and it was not until they are under the close supervision of a prison that their psychotic behavior was obvious. The exact number of criminals who are psychotic is not known, as undoubtedly there are many persons in prisons who would be considered insane if their cases could be carefully studied.

In the past twenty years, and particularly in the past five years the courts of the State of Delaware have considered the act of crime as the possible result of some personality defect with definite emotional aberration, and for this reason have referred these cases for examination to the Mental Hygiene Clinic of the Delaware State Hospital. This group includes cases of assault and battery, indecent exposure, homosexuality, assault on children, obscene letters, arson, and similar types of offenses. These cases have been carefully studied by the court, and the majority of cases of a similar nature have been put on probation with the understanding that they should use the extra-mural psychiatric facilities of the State. There is a healthy tendency to use extra-mural psychotherapy in the treatment of individuals who repeatedly commit the same type of offense. Many of these cases have responded to such psychotherapeutic approach, however, some of the cases have required hospitalization. In the past we have had no facilities for accepting non-psychotic aberrants who are criminally inclined, and we were forced to allow them to remain at large.

The General Assembly of 1947, recognizing the need of a department with facilities to care and treat cases of the above nature, amended the existing laws and authorized the State Board of Trustees to establish a department for "criminally insane adults and criminally inclined juveniles." The following is the content of the law pertaining to this department:

"Be it enacted by the Senate and House of Representatives of the State of Delaware in General Assembly met (three-fourths of all the members elected to each House concurring therein):

Section 1. That the Board of Trustees of the Delaware State Hospital at Farnhurst is hereby authorized, empowered and directed to establish at the said hospital a new department for criminally insane adults, and criminally inclined juveniles, regardless of their mental capacity, said department to be established on the present grounds of the hospital.

Section 2. All criminally insane adults and criminally inclined juveniles shall be admitted to this department to be created at the hospital when committed by any court of the State of Delaware having jurisdiction over the persons so committed.

Section 3. The governing authorities of any institution of the State of Delaware to which persons already have been committed who classify for admission under the terms of this Act may petition any court of competent jurisdiction in the State of Delaware praying an order to remove inmates of said institution or institutions to the Department for criminally insane at the Delaware State Hospital. Upon the recommendation of the State Psychiatrist and after such hearing as the court may deem proper, any court of competent jurisdiction in the State of Delaware shall have the power to order such criminally insane adult or criminally inclined juvenile to be committed to the Delaware State Hospital for treatment in the Department for the criminally insane.

Section 4. The expenses of the removal of a criminally insane adult or a criminally inclined juvenile and of his admission to the Delaware State Hospital, and the charges and expense for the maintenance and care at the Delaware State Hospital, shall be paid by the institution which had charge of such case. Where such cases are committed by the proper courts otherwise than from an institution of the state then in the case of such commitment, the Levy Court of the County where the person so committed was a resident at the time of the commitment shall pay the Delaware State Hospital for such removal, admission, maintenance and care. If any such criminally insane adult or criminally inclined juvenile shall have any real or personal estate, said Board of Trustees of the said Hospital shall have, for the expenses and charges so incurred as aforesaid, the same remedy as is provided in Section 11 of Chapter 76 of the Revised Code of Delaware, 1935 as amended.

Section 5. The State Board of Trustees of the Delaware State Hospital at Farnhurst is hereby authorized, empowered, and directed to erect on the grounds of the State Hospital a new building to accommodate forty-five adults and juveniles who may be committed to the said institution by the courts of the State, under the provisions of this Act."

The above Department will be established in a newly erected building within the next two months.

The building is completed, has all the necessary modern facilities, and will be dedicated on September 27, 1950 and opened for service on October 1, 1950.

Once more the state of Delaware will experience a new method of approach to the criminally inclined juveniles as well as mentally ill criminals.

## DYNAMIC CONCEPTS IN PSYCHIATRY*

Edward A. Strecker, M.D.,**
Philadelphia, Pa.

This is a very happy occasion for me to greet an old and tried and true friend, and to congratulate him publicly on this, one of many honors he has achieved. I think I know why you selected him as your President, because of the fact that he is an outstanding doctor and psychiatrist and one of the leading physicians in American medicine, and a gentleman of unimpeachable integrity. I say that after many years of close relationship with him.

There are other reasons you might have had, which are perhaps particularly and peculiarly known to me. He is a leader in taking forlorn hopes and turning them into reality. For many years, alone and unaided, he has been spearheading a movement to place the study and care, the treatment of the mentally sick, on the same level in our mental hospitals as we have in our medical and surgical hospitals. He does it the hard way, because it is the only way to do it. And I have extreme faith in the fact that he will achieve this thing which will then be the most important thing in psychiatry.

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*Delivered before the Medical Society of Delaware, Wilmington, October 12, 1949.

**Professor of Psychiatry and Chairman of the Department, University of Pennsylvania.

I think we will perhaps live to see the day when psychiatric hospitals are on the same level and follow the same standards and subscribe to the same ideals that medical and surgical hospitals do, and when that day comes, it surely will be due to the indefatigable patience, determination and even scientific belligerency of your President.

And when that day comes it will mean that the last trace of scientific stigma which surrounds psychiatry and the last remnants of man's inhumanity to man will have been annihilated. I can only say that I wish I could feel that I was responsible for this great thing which is in the making and which will one day be achieved.

I want to talk to you about etiology. I am a psychiatrist. You have to expect me to give it a psychiatric flavor, but I think its application to general medicine in all its fields, extrapsychiatric fields in which you labor, will be clear enough. So I am not speaking strictly from the standpoint of psychiatric etiology. I need not tell you of the welter of ignorance, superstition and even bloodshed, from which the etiology of medicine, scientific etiology and particularly psychiatry has come up from the dim ages of the past. That is being reasonably rapidly eradicated, but there are still many traces of it.

Within the past year a man of prominence and intelligence in his field came to me with his young daughter who obviously had schizophrenia, and I felt the kind of schizophrenia that would get well under satisfactory hospital treatment, I so told him.

This man, intelligent in other ways, said, "Doctor, I would sooner see my daughter dead than in a mental hospital."

Interestingly enough, at about the same time an older daughter came down with the effects of a damaged heart due to articular rheumatism in childhood, and the internist who saw her said, "This girl is very sick and she will have to go immediately to a hospital for treatment." The father felt that that was perfectly all right. It didn't trouble him at all, except his natural sadness that his daughter was so sick.

As it happened, gentlemen, the daughter with schizophrenia was entirely well in less than three months, and the daughter with the valvular disease of the heart due to an earlier rheumatism will, unfortunately, be a cardiac invalid the rest of her life.

This is an interesting little exposition of the fact that some of the old superstition and ignorance in the field of etiology, of psychiatry, still persist.

There is another thing. You intelligent gentlemen know it, but many doctors do not, that it is really maligning psychiatry to say that psychiatrists are ignorant of the reasons their patients are sick in their minds. Point for point and fact for fact, etiological fact for fact, psychiatry is as well informed as any other field of medicine I know of in the etiology of its sick patients.

There are, of course, areas which need a good deal of illumination, but I repeat that all in all, fact for fact, we are reasonably well informed. For instance, a large segment of psychiatric illness was cleared up, as far as its basic etiology goes, a good many hundred years ago, when Hippocrates said that immortal thing, that the brain is the organ of the mind. When he said that, he, in effect, dispelled the ignorance and superstition which had to do with a large segment of mental disease. Briefly, that is the explanation of more than 60 per cent of actual psychoses, the psychoses which are perhaps chiefly dependent upon organic disease of the brain, particularly syphilis of the brain with the presence of the spirochæta in the brain, the great number of senile and arteriosclerotic deteriorations, the toxic reactions, and many other things.

Now, then, what have been the contributions of psychiatry to etiology, not only in psychiatry but in the whole field of medicine? One of those things, which was a byproduct of its studies — and often the important things that are turned up in research are byproducts, not the objective which the researcher set out to reach, but things he discovered on the way — is so important and significant that it would be impossible to conduct the practice of medicine in any of its areas without constant attention to this great fact.

I sometimes think that psychiatry hit upon this important etiological truth because, unlike other fields of medicine, for instance, cardiology and many other fields, it did not have instruments of precision. It did not have many instruments by which it could check and accurately estimate the situation within the human body, and therefore, lacking instruments of precision, psychiatry had to use the things it had, from the neck up. In other words, its brain. And it came upon this important fact which changed entirely the course of the practice of medicine, and that fact is this: that man is a unified organism. In his functioning there is no such thing as a body and a mind. They are so closely entwined that even in the simplest process the entire person functions and not one particular part of him.

Gentlemen, some of you are old enough, as I am old enough, to know the time when that fact was not recognized in the practice of medicine. Each of the various specialists staked out one little area of a man's body, staked it out carefully and skillfully, and understood it thoroughly, but they knew man only in the pathology of his eyes, or of his nose and throat, or of his gastrointestinal tract, or of his muscles and his bones, and that was a very restricted field in which to practice.

Psychiatry changed all that. It promulgated, first, the hypothesis which is now an accomplished scientific truth, that never in sickness or in health can we look at a man as anything but a totally acting, a unified functioning organism.

So that, in effect, when a man is physically sick, even slightly sick, a cold in the head, he is sick all over, in all his body and in his mind, and when a man is emotionally sick, when he is in the grip, for instance, of unsolved mental conflicts, not only his psyche but his body, too, is sick, and the evidences are there so that anyone who runs may read. That, incidentally, is the entire basis upon which the important superstructure of psychosomatic medicine has been erected.

The greatest enemy of straight etiological thinking is something I call, in the Latin phrase, "post hoc propter ergo hoc" thinking. It is the kind of thinking that erroneously assumes because two things happen in sequence, the second is necessarily due to the first. That was the thinking of our primitive ancestors. No doubt when some member of the tribes of our primitive ancestors disappeared from the face of the earth, as they were forever doing, some of the men of the tribe gathered together and said mysteriously to each other, "I see So and So is no longer with us." Of course, they didn't use the English language, but that is what they meant. And the others said, "No, he is no longer with us."

Then the next question was, "Where is he?"

And then some wise men of the tribe observed in this wise: He said, "Did you note that yesterday before he disappeared there was the noise of the angry gods in the sky, (thunder), and there was the bolt of fire (lightning), which was their displeasure, and no doubt So and So in some way has offended them and they have removed him from our midst." That is post hoc propter ergo hoc thinking.

You may think that primitive thinking stopped when man began to evolve into something on a higher level, more intelligent, but it didn't. It has permeated etiological thinking in medicine and psychiatry; within the memory of us there is still evidence of it, and there is some today. Not so long ago someone thought that because a few patients who were mentally sick got well after infected teeth were removed — and that does happen occasionally but rather rarely — then all mental disease, all psychoneuroses, all criminalism, all feeblemindedness, was due to focal infection, because one or two patients got well.

Gentlemen, within my memory and within the memory of Dr. "T," that was the beginning of a psychiatrical-surgical orgy which I do not have the eloquence to describe. Hundreds of thousands of teeth, some of them infected, most of them sound, were removed. Tonsils by the bushel — not that that matters very much, because it is an unseen trauma. But then these gentlemen became more enthusiastic and began to remove cervici uteri, and finally, in their insatiable ambition, they began to resect large yardage of human colon. And then patients began to die, and there came to be kind of a rather disgraceful situation.

I well remember my predecessor, the first Professor of Psychiatry at the University of Pennsylvania, Dr. Mills, saying at a psychiatric meeting that "a certain large number of psychiatrists have joined with their colleagues, the surgeons, in the hopeless quest of removing mental disease from the face of the earth by reducing the colons of human beings to semicolons."

So there have been these periods in the post hoc propter ergo hoc thinking of etiology, not only in psychiatry but in medicine, which have been sterile periods.

I might say that following the amazing and important contributions of the psychoanalytical school as to the importance of the unconscious in the mental conflict which perhaps has been the single greatest contribution, there unfortunately did follow a sterile period when the microscope was neglected and gathered dust unto itself, when there was no interest in what was actually happening in the structure of the human brain, and so forth and so on.

So in medicine, in psychiatry and in any field there have been these cycles, when some particularly telling contribution was followed by a period of stasis and neglect of the important areas which must be all-embracing if they are to solve the problems of human disease.

You think and I agree with you that the contribution of Noguchi and Moore, when they demonstrated the living spirochete in the brain in paresis, was an epoch-making contribution, and so it was, but following it there was a period of sterility concerning the psychology of human sickness and its psychopathology.

I know several neuropathologists who were ardently occupied in attempting to find a neuropathological basis for conversion hysteria in certain layers of the brain cells.

The causes — we can use that word; it is a much abused word — of nervous and mental illness, and also of illness in any other field of medicine might be thought of as predisposing and exciting. Predisposing is not precipitating. Precipitating is something that happened to be there at the time the person came down with schizophrenia or pneumonia or whatnot, and schizophrenia is not due to the fact, as many mothers think, that when they were carrying the baby in their arms, it fell to the floor and hit its head. All babies fall to the floor and hit their heads. If it caused the psychosis, all human beings would have schizophrenia.

Precipitating is something merely that was incidental and usual, usually of not very much importance. Predisposing is important. You can see an analogy, perhaps, in the predisposing causes of war.

The thing that makes war is not the invectives delivered by our friends, the Russians, and others, including ourselves, at the United Nations table. It isn't the fact that there has been a border incident and somebody has done something to a national of another country, or even that an ambassador has been insulted. All ambassadors are insulted, and probably they deserve to be insulted. It isn't even because an ambassador has been assassinated.

These are precipitating things. The predisposing causes of war are deeply rooted in economics, in basic differences of ideology, in the struggle for existence, and in spiritual reasons.

So is it also true in medicine and psychiatry. Predisposing is something important. It is something that prepares the soil, which, in your field or in mine, makes that person vulnerable and likely to come down with some particular illness.

For instance, in Philadelphia and in Wilmington in a few months we are going to have winter. Well, the goosebone prophets say it is going to be a very hard winter, cold, wet, sleet, plenty of snow, plenty of ice and so forth. In Philadelphia, and I am sure in Wilmington, this thing is going to happen very often. Somebody is going to be picked up from the gutters of the city, drunk, taken to the station house because of drunkenness, and then the police surgeon is going to come in and examine him and say, "Yes, this man is drunk, but he also has pneumonia. He has to be taken to the City Hospital.''

All those things that led up to his pneumonia, his exposure to inclement weather, insufficient food, particularly insufficient vitamins, his alcoholism, being insufficiently clad — all those things predisposed the soil of his respiratory system so that it became an easy breeding place for the various organisms causing pneumonia. The organisms were the things that excited the pneumonia. That is a simple illustration.

And so in psychiatry and in medicine — I haven't the time to go into each one thoroughly — we have certain predisposing things that we think of when we see a sick persons, whether that person is sick with schizophrenia or manic depressive or anxiety neurosis or arthritis or whatnot. Those are the things that Dr. ''T'' thinks of when he is in his office looking at a sick person. These are the things that my good friend, the internist, thinks of when he has before him a problem in internal medicine.

Those are the predisposing things, those are the things that prepare the soil. They are such things as inheritance, the particular age epoch of the individual, how old he is — a much neglected fact, a very important clew as to what is the trouble with him. His occupation, his sex, the environmental factors of his life, and particularly — I was going to say in psychiatry, but I will amend that to say in all fields of medicine — his childhood environment. And I say to you that is the most important predisposing factor in human ilness, not only in psychiatric illness.

If there has not been a reasonably proper framework of the things that a child needs and must have, basic needs in childhood, just as basic as food and vitamins and fresh air and sunshine, if there has not been the proper framework of being loved and wanted by the mother and later by the parents, of getting that emotional security which can only be given them, and which is the only true foundation stone of a sound personality, and if, in addition to that, the love of the mother has been not only a selfish love but an unselfish one, not only holding, wanting, loving the child, but also being willing to relinquish emotionally— if there had not been these things in childhood then there will be trouble later on. The mother, more than any other figure in the life of every human being, has to be two seemingly opposed things. She must be, first, the great lover and the great protectress, the source of emotional strength and security needed by this helpless child, but, in addition to that, she must also be the great frustrator, because in addition to holding her child closely to herself and loving it, she must be willing to meet the issue of gradually pushing the child away from herself, untying the maternal apron strings, preparing the child for the larger part he must play as a self-thinking, self-directing unit in adult life.

And if those conditions fail too flagrantly, if there is not enough of that in the life of the child, then you have a predisposing situation which makes for a great amount of human disease of all kinds, and much of it is within the field of psychosomatic medicine. I say this to you now, not as a psychiatrist but quoting thoughtful men in the practice of medicine in other fields.

For many years almost any field of medicine in which you practice, in which you labor, in something more than six of every ten patients the basic pathology of that illness will not be preponderantly organic. There may be organic disturbances, but in something more than six in ten patients the basic pathology will not be a pathology of tissue, it will be a psychopathology, a pathology of unsolved mental conflicts, and the final issue of that may be very misleading, because it may be in terms of headache and backache and nausea and vomiting and many other things.

We have this soil prepared. I, in a way, leave in your laps at the moment the individual who, for various reasons, is predisposed to human disease, variously disposed, sometimes lightly and sometimes heavily, but in all of us in some degree. It still becomes necessary, whether the disease is tuberculosis or schizophrenia, for that individual to come in contact with exciting causes, and in psychiatry and in a way also in other fields of medicine, those exciting causes are preponderantly physical or preponderantly psyhic or emotional.

The important word of those two words is "preponderantly," because there is no such thing as an individual being sick solely because of physical causes, or solely because of phychic or emotional causes.

I repeat, the human being is a unified organism, always, in all conditions, in health and-in sickness, functioning totally, never in any one single part of his body or mind.

Preponderantly physical causes are such things as fever, infection, exhaustion, and a great array of exogenous intoxications, now much multiplied, as you know better in Wilmington than any other place in the world, because you are one of the high points of American industry. The chemicals used in various industrial pursuits and occupations, to which has been recently added the radioactive substances, the endogenous things, the poisons created within the body in the course of infections of various kinds, and, on a much broader basis, any decided and continued shift in the body metabolism in any of its systems, whether it be the thyroid or cardiovascular or whatnot, and trauma and things of that kind, are preponderantly physical.

They are the things that medical students like to hear about, undergraduate students, because they have been so heavily fortified in anatomy and in some of the things which I think of as rather static in the study of the human body, things that are under your view but don't move and don't do anything, a dead liver, a dead spleen, a dead heart. Later on, of course, it is supplemented by physiology, but still too heavily fortified by the organic, so that these young men come to worship at the altar of organic disease, and they sigh with great happiness when they talk about etiology — that is, before I get through with them. Later, they think rather differently. However, at first, they say, "Give us the causes that we can see, that we can put under the microscope, like the spirochete of syphilis, that we can see in the chemical test tube as in uremia, the organism, the other things that can be seen and sometimes felt, touched, weighed and sometimes even smelled."

They are the things which these youngsters say, "we can understand. They are the kinds of causes which appeal to us." And yet those causes are accountable for something less than 50 per cent of human disease.

It is the imponderable, but nevertheless more real and concrete things, the things that are preponderantly psychic and emotional, the things that you can't put under a microscope, or see in a test tube, or touch and weigh and measure which, gentlemen, with the modern point of view concerning medicine, become increasingly important every day of your practice.

A man can have just as bad a headache because of an unsolved emotional conflict as he can if he has a brain tumor. You can't see these things, but you also can't see love and hate and frustration and jealousy. I think maybe you can see them, I will amend that statement. You can see them in their bodily profiles.

There is in my mind at this minute an episode, one of many in World War I, and this illustrates the unification of the function of the human organism. There stood before me in a dugout in France a fine officer, who had been repeatedly cited and promoted on the fields of battle for great gallantry and courage, and who had made an important contribution to the battle we were fighting then. He stood before me in a blue funk. That was in the 28th Division in France. He said, "Major, you have got to send me back to the hospital. I can't lead my men tomorrow."

There was an action scheduled for the next day. I said, "But, Major, why? You have been promoted, within a few weeks, from Lieutenant to Major. You have distinguished yourself. You have showed great familiarity with military tactics and tremendous and superb courage."

He shook his head and he said, "No, I can't go on, because, as you know, in this National Guard outfit of ours, I know these boys I am supposed to lead into action and have led into action. I know them and I know their families. I have grown up with many of them. Suppose I give a wrong order and it costs the lives of many of these fine young men?"

That is an ethical problem, that is an emotional problem, and yet you could be ten feet from him and see the bodily profiling of his torn emotions. His face blanched white, sweat standing out on his brow. I didn't have to take his pulse to know it was more than 150. You could see the upheaval of the great vessels of the neck. He was trembling like a leaf.

I couldn't see and you couldn't see and measure his ethical problem, but you could see the physical expression of it, and I never saw a better exemplification of the unity of human functioning.

Contrariwise, a physical situation of any kind penetrates every nook and recess of the human emotions and is reverberated and repercussed there. Delirium of fever, is a physical thing, preponderantly; temperature goes up, the infection has increased, the bodily resistances are lowered, and there suddenly comes a stage we call delirium. And you say that is a physical process, but study the outpouring of the delirium, the things that come out which are not in that person's consciousness, the things that come out that have been repressed in his past life, the outpouring from the very depths of the unconscious psyche.

I suppose, Dr. "T," that is one of the reasons why I understand in modern surgical hospitals wives of husbands going to be operated on are not permitted in the anaesthesia room, because no one knows just what might come out.

So these are the incidental, imponderable but very real things in human disease, the things that are preponderantly emotional and psychic, the whole basis again, I say, of psychosomatic medicine, interwoven of many human ingredients, human conflicts are produced, the mind is a veritable battleground. There are aggressions, hostility, guilt feelings, and a whole train of things that may perhaps be finally expressed in some constellation of so-called psychosomatic symptoms — headache, backache, nausea, vomiting, tachycardia.

So, gentlemen, as you practice medicine, you may have seen two patients within two hours of each other, and they may have much the same symptoms. In one case, the first patient, the situation is preponderantly due to real tissue pathology of the cardiovascular apparatus, and in the next patient, with almost a replica of the symptoms, it is due to the wear and tear of repressed serious mental conflicts.

I think there is too much thought in all of medicine about placing a diagnostic label on something. Much more important is the philosophy of etiology, and not an exact labeling, because the danger of that is that when you affix the label of arthritis or pneumonia or even malignancy, you think that the job has been finished. I thought of a jingle last night. I hope you will forgive me if I pass it on to you. I thought of it last night when something uninteresting was going on: "Little Jack Horner sat in a corner, eating his diagnostic pie. He stuck in his thumb, pulled out a plum (labeled it very neatly and concisely with a diagnosis) and said what a smart boy am I."

He wasn't at all smart, and none of us are smart if we do that sort of thing, if we close the books of our patients' cases by putting on them some diagnostic label.

In the few more minutes at my disposal, I want to say, first, that it is never permissible to think in finished terms etiologically of any human disease, no matter how well the facts of that human disease are known. You could tell me of many things in your fields in which you say, "We know about that thoroughly." You know the cause, you know the pathology, you know the symptoms, you know the prognosis and you know the treatment.

The one disease the psychiatrist would naturally think of would be paresis. He would say to you, "We know about paresis. We know it is due to the spirochete of syphilis in the brain structure. We know the pathology so well that we can often tell at autopsy by feeling the tissues whether the patient is paretic."

He can certainly tell that from the study of the effects on the brain. He knows his symptoms and he knows the prognosis, and he knows the best that is known about treatment. But I say to you he doesn't begin to know really about paresis more than you really begin to know about pneumonia or tuberculosis or influenza or poliomyelitis.

And one thing that strikes you that he doesn't know is this: that of every 100 people who get syphilis less than 5 per cent get neurosyphilis, and of that 5 per cent less than 2 per cent get paresis.

Why don't they all get paresis? I know you can give various reasons, but you cannot complete the formula, either in paresis or in any human disease, and could you complete all those farmulas there would be no more interest in the practice of medicine.

So I make the plea for you to think in certain terms at least of the non-specificity of human disease. Not that diseases are not caused by germs, bacilli, toxins and so on. There are, but do not think of this as having finally disposed of the situation in human sickness or in individually sick persons. There is still a good deal that has not yet been written into the formula, and much more important than the disease is the person who has the sickness.

It is true in psychiatry and it is true in general medicine. Much more important than the arthritis, after you have studied it, is Mary Jones who has the arthritis, and how does she get along with her husband and what has been her past life. Much more important than the actual facts of cardiovascular disease is the person who has that particular cardiovascular disease.

Fix your attention on the person who is sick a little more and less on the sickness itself. I can take an analogy from what animals do when they are confronted with the threat to their physical survival. Animals, gentlemen, use the weapons with which nature has endowed them. They use the weapons with which they have experience in every-day life and which they have found are trustworthy in meeting the threat to their survival.

There are the poundage animals like the elephant and the rhinoceros. When their life is threatened by danger they use poundage, the mammoth muscular strength, and charge into the danger head on, attempting and often succeeding in demolishing it.

And then we come to the great cats, like the lion and the tiger and the panther. What do they do when their life is in jeopardy? They use their strength, also, but particularly they use the tearing power of their fangs and their claws and their feline cunning and sagacity.

Then you come to an interesting animal, which I sometimes think of as the animal replica of certain kinds of schizophrenia, the opossum. When the opossum is in danger, when its life is threatened, it plays dead, and so do some of our patients in the wards of our hospitals.

And then you come marvelously to the great myriads of insects, whose life is constantly in danger, who seem on the surfaces weak and defenseless, and yet they save their lives time after time by the power of their camouflage by which they merge into a leaf of a tree, or into the trunk of a tree, or into a clod of dirt, so that by achieving inconspicuousness they save their lives.

Recently I have been interested in studying perhaps the most amazing mammal, the sloth. I don't know if you know about the sloth. I didn't. There is absolutely no reason why the sloth should survive in the jungles. The sloth is dim-witted, hard of hearing, and doesn't see very well, half blind. He is so dim-witted and so hard of hearing and so impaired in his vision that when a baby sloth, which clings to the matted fur of the mother, drops to the ground and rolls away, usually the baby gives a little cry of distress, and the mother very slowly and slothfully starts off to find it. In more than half of the cases she never finds the baby, because she can't see well enough, she can't hear well enough, and she is so dim-witted that she may pass within six inches of the baby and never find it.

It takes the sloth several weeks to travel two miles. The sloth is apparently so indifferent to the passions of life that sometimes, when engaged in the preparatory phases of sexual relationship, both male and female seemingly forget the business in hand at its most passionate moment and retire to the tree to hang by their toes.

That is the sloth, defenseless, seemingly absolutely defenseless, and yet the sloth, in spite of that, not only survives, not only escapes its enemies, but is actually increasing.

There are several reasons for this, and one of the reasons is the point I have made, that it uses its natural defenses. It hangs from a tree and it looks like the rest of the tree. That helps.

It has no body odor, strangely. The thing that doesn't move much, you would think it would smell to high heaven, but it doesn't have any body odor. And then, it eats the kind of foliage which all the other animals in the jungle absolutely despise and have nothing to do with. So it has unlimited food supply, and therefore the sloth survives.

The point I make, that is an analogy from animal life, is that when human beings are threatened with psychological menace or psychological dissolution, they, too, use the particular weapons which that certain personality, Mary Smith or John Jones, has found useful in every-day life. And so the structure of human functional disease is built and each person has a little different design in his particular house of functional illness than any other human being.

The moral is to look at the person who is sick and less at the sickness which he has.

Another philosophical concept might be derived from the preaching of a great psychiatrist, Adolph Meyer. It is unfortunate that it is clothed in a lot of strange sounding Greek root words and verbs, but the important part of his concept was an extremely valuable and significant contribution to the practice of psychiatry and the practice of medicine. Adolph Meyer said that you should look at the person who comes into your office or is before you in some other way, who is sick, and you should say to yourself — and he was talking about psychiatry — "This is perhaps the final maladjustment. It might be schizophrenia, it might be anxiety neurosis, or it might be conversion hysteria." In your field of medicine it might be heart disease, it might be arthritis, it might be something else. Adolph Meyer said, "You look at that patient and the long lifeline of his history, and you come upon certain facts. You don't come upon them all, but you come upon certain facts which have been significant in producing this final maladjustment of emotions and of tissue."

And I have such an actual case very badly illustrated on the board. This young woman came to me at the age of 21 with schizophrenia, or I should say she was brought to me. I have omitted all but a few of the salient facts from her life history. She illustrates the psychobiological point of view in the study of human disease.

She was born at the age of zero. That is the age you are born at as far as I can determine. The orientals say they are one year old when they are born. Here we are zero years old. But she was born in difficult instrumental labor. That might mean something, it might not. It is a fact worth recording. At the age of four, she was in an automobile accident and had a head trauma. She was unconscious for approximately 30 minutes, no fracture. That might mean something, it might not. It is too early to discard it as a factor.

At the age of 7 she had a mental trauma. She was cornered by some tramp in an alley and he exposed his genital apparatus and made this little frightened girl look at it. That might be important. It was a mental trauma.

At the age of 12 she was much upset by her first menstrual period. She had been illy prepared for it. She was frightened by the hemorrhage. First she felt she had some terrible sickness and was going to die, and then she felt she had committed some terrible sin — a very common reaction in girls who have not been prepared for the menstrual period, and a very serious one.

At the age of 15, she broke her wrist, a Colle's fracture. You say that is trifling. Usually it is. This fracture happened to be badly set. The surgeon didn't do a good job, and she had a very bad deformity. In the life of a young woman that might be important.

At the age of 19, she had her only love affair in her life, which ended disastrously and very unhappily.

And then, just before she was brought to see me she had slashed her wrist with a razor blade and attempted suicide. And here she was before me with schizophrenia.

Another factor all through her life — and a very important one — was that practically from birth to the age of 20 she was under the disfavor of her father, who much preferred an older sister, who was prettier, who had apparently more intelligence, who was socially more adept and so forth. So she was under the bar of her father's disfavor and did not have from him the thing which is so much needed to promote the growth of a sound personality — being wanted and loved and given a certain amount of importance in the family constellation.

Schizophrenia at the age of 21. I might substitute for schizophrenia tuberculosis, arthritis, many of the human diseases, and in the same way I think it makes for a sounder philosophy of thinking and a sounder technique of treatment if you have in mind a kind of life chart of the patient who is now before you with some human disease.

Finally, I sum up, giving you a formula which I have used in practice for a good many years. I think it is equally applicable to your work, and it explains certain rather interesting things. As you look at the person who is sick, say to yourself, "what is the predisposition of this individual to illness, and perhaps to the particular illness?" And by predisposition you mean things that result from the constant interaction between person and environment, things which have been accumulated on the debit side, vulnerability, predisposition, the kind of things I talked about when I talked of what is predisposing. That is on the debit side, in reading the ledger of that person's life.

And then you have to add something called stress — stress very broadly interpreted, perhaps acute dramatic stress, some great calamity in the personal life of that individual. And, rather more importantly, long, drawn-out stress, situations of all kinds, physical and emotional, which continue to operate disastrously and from which, seemingly, there is no escape, so that gradually the wear and tear on that individual becomes a serious thing.

You have these two symbols in the formula, predisposition plus stress. But the individual also, in his life encounter with his environment not only has his debits, but also has his victories. He is not always vanquished by his environment but he also overcomes difficulties of environment, and he gains strength of personality in his victories. So that every individual gains a certain amount, a varying amount of resistance against human disease.

So when you have your predisposition plus stress divided by resistance equals something I call R1 ,R2, R3, R4, R5, because the severity isn't in the specificity of the disease, it is in the patient's previous life history.

This is as true in your field as it is in mine. Sometimes, as you know, tuberculosis is not too serious a thing. It may be a small lesion at the apex of the lung. In another person it is much more serious, bone tuberculosis, and finally, there is a malignant tuberculosis, so-called miliary, in which the bacillus is in the blood stream.

And so, too, in my field, schizophrenia may not be too serious, or an anxiety neurosis may be disposed of in a reasonably short period of time. But in another individual they may be extremely serious, so serious that they may deserve to be spoken of as malignant.

That isn't because the person comes down with a certain kind of thing as much as it is, what are the things, the previous things in this individual's life, which determine not only the kind of reaction but which determine the depth and severity of that reaction.

I think fairly, I hope not with unjustifiable enthusiasm, I give you these few lessons from the pages of psychiatry, which I believe it would be profitable to carry into the everyday practice of medicine.

Again, I say I am most happy at this well deserved honor which has been accorded my life-long and dear friend, Dr. Tarumianz.

*111 N. 49th Street.*

### DISCUSSION

PRESIDENT TARUMIANZ: If I may be allowed to say a word about Dr. Strecker's compliment to me, I really don't deserve all that he has said. I would not have been able to do anything without Dr. Strecker's assistance in teaching and guiding.

Dr. Strecker is a younger man than I am, but we have worked together for the past 30 years. To me he has been inspirational. My ideal of psychiatry, medicine, and citizenship, and consideration for humanity has been incorporated at all times by Dr. Strecker's ideals. He is a good philosopher, as you all know. He is a splendid citizen, he is a good man all around, but, above all, he is a good doctor.

This lecture of Dr. Strecker's is really very timely, since I know from my experience of long years every physician is unconsciously practicing psychiatry every day, so I am sure we have all gained something from this hour that we have spent listening to Dr. Strecker's lecture.

There never will be a time when there will be enough psychiatrists for specialists and general practitioners to refer all psychiatric cases to psychiatrists, at least not in the next 20, 25, 30 years. So it is necessary for every physician, regardless of what type of specialty he is engaged in, to know the fundamentals of psychiatry.

Psychiatry is the foundation of the practice of medicine, theer are no two words about it, because it is the only branch of medicine which considers the human being as a whole organism.

Dr. F. M. Harrison (Farnhurst): Dr. Strecker has just given us much food for thought in his excellent exposition of some of the dynamics in psychiatry. In fact, I find that he has so completely covered his subject that it is difficult to pick any bones with him, so to speak, or even to select any one phase of his presentation which should be emphasized more than the other.

From what he has told us, however, it is quite evident that certainly every physician should have an understanding of the dynamics and principles of psychiatry, and should cultivate the psychiatric point of view which stresses the individual factors in disease, particularly as they express themselves at the psychological level.

Psychiatry certainly stands in close and intimate relation with medicine and hence it must always represent an important chapter to the clinician.

The internist, as has already been pointed out, will certainly fail in his work unless he is acquainted with the aims and methods of psychiatry, and, at the same time, the psychiatrist can become expert only after a thorough training in internal medicine.

As Dr. Strecker has pointed out, there still persists in the mind of the public and in the thinking of a section of the medical profession the naive belief that psychiatrists are hopelessly groping in the dark for the causes of the symptoms and the diseases which occur in their patients. This belief is a survival of the idea of demoniacal possession, and even more bizarre superstitions. Actually, as Dr. Strecker has pointed out, psychiatry has accumulated a considerable body of etiologic information, and it is true, of course, that in several fields of mental disease, notably in schizophrenia and manic depressive psychosis, the specific causative factor still eludes scientific research.

Nevertheless, even here much progress has been made, particularly in chemical, metabolic, neurophysiologic and electrical investigations, and in the intensive study of the different personality types.

Perhaps one of the greatest contributions psychiatry has made to scientific medicine, as Dr. Strecker has mentioned, is its emphasis on the importance of the emotions in the dynamics of disease. At the beginning of this century, there was a deeply rooted opposition to the idea that emotions could induce illness, either physical or mental. Such a thing was generally repugnant to the then current medical thought. It did not harmonize with the prevailing physio-chemical theory of disease as it had been crystallized by the brilliant achievements of the clinicians of that period.

Due to the emphasis placed upon it by psychiatry, however, it is now being appreciated that a large proportion of all patients encountered by physicians in their daily practice present psychic factors and emotional conflicts of importance, and that these are capable of producing a great variety of functional disorders as well as organic or structural changes in the different organs of the body.

Unless these facts are taken into consideration by all physicians their therapy will be ineffective. Dr. Strecker has mentioned that the important thing is not so much the specific nature of the illness but the reaction of the individual to that illness.

Psychiatry has always emphasized and

stressed the fact that the individual responds to his environment as a whole and that he brings nothing to bear but total reactions to the specific problem at hand. This is an extremely important concept in etiology.

Disease is a modality of organic activities, and like all organic activities, it is a reaction of the organism as a whole. Disease represents not the responses of separate organs or partial reactions, but total reactions to the causative agents, whatever they may be. The neuroses and the psychoses are the best examples that we have of this. In fact, there is really no such thing as a local disease, strictly speaking. All diseases are general in nature and affect the entire organism. Their principal manifestations, however, may be more or less localized.

The meaning and significance of these facts to internal medicine are that many chronic conditions, whose etiology and pathogenesis are unknown, may be explained as total reactions of the organism to long continued stress, both from within and from without the organic compensations and defenses of the tissues, finally breaking down in certain directions, so that one organ becomes involved to a greater extent than the others.

The study of disease alone as a disease can never account for symptoms in a complete way. We must also consider the dynamic factors in the organism at all times.

In closing, I should like to take this opportunity to congratulate Dr. Strecker for his very stimulating remarks on a highly important subject, and a very significant aspect of clinical medicine.

Dr. Edward Koch (Farnhurst): While listening to Dr. Strecker's very illuminating discussion on the modern concept of etiology and psychopathology I felt myself increasingly preoccupied with one question, and this is a question which has often been asked me both by physicians and by laymen. The question briefly is, what is normal in psychiatry?

I personally feel that it is a question that is rather difficult to answer. It seems to me that in psychiatry we must give up the idea of some absolute norm which applies to all individuals, but I think we have to establish a series of norms, perhaps one for each individual who comes to our attention.

Over and beyond that, I think we must discriminate between what is a norm, let us say, and what is an ideal for each individual. The aim of psychiatry is to try to attain a certain ideal for each patient who comes to the psychiatrist. Very often we fall short of that. Nevertheless, I feel that that should be our aim.

Dr. C. J. Katz (Delaware City): Dr. Strecker has brought out or pointed up two phases: first, that there is no difference between a phychiatrist and a surgeon or any other specialist. We are all doctors and should remain so.

Second, the philosophical question of mind over matter he solves in a very simple way. He says, "Never mind, it doesn't matter. Look at the patient."

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## THE DIAGNOSIS AND TREATMENT OF EPILEPSY*

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Though the problem of epilepsy has been reviewed many times there remain problems of practical significance upon which new light is constantly being shed. For this reason, a perusal of the problem with reference to issues which are frequently encountered in practice may be of considerable interest. The routine account of the clinical features of epilepsy is so familiar that nothing is to be gained by its review, and the comments which follow will be confined to those issues in the diagnosis and treatment of epilepsy which constitute recurrent problems in the practice of medicine.

**Classification.** Epilepsy is a symptom, associated with many causes, and it is therefore more consistent with the facts to speak of "the epilepsies" than of epilepsy. The first step in a problem with convulsive seizures must be that of classification or determination as to whether the seizures in question are idiopathic or symptomatic in origin. Those seizures for which no cause is found are regarded as idiopathic, while the term symptomatic is reserved for seizures, whether generalized or focal, for which a specific cause can be designated.

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*Read before the Medical Society of Delaware, Wilmington, October 11, 1949.

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The classification of general seizures is determined by various factors, among them being the age of onset, their admixtures with other types of seizures, their time of occurrence, and the character of the physical and laboratory findings. Most cases with general seizures are idiopathic in origin, but many are symptomatic in nature. It is a common error however to designate generalized seizures as of idiopathic origin without further study. Though it is not possible in the majority of instances to determine the cause of generalized seizures on primary examination, it is best to classify such cases as ''seizures of undetermined origin'' until further studies can be made to indicate their precise nature. The process of study and selection requires considerable care in which thoroughness is more important than experience.

A patient with seizures of idiopathic origin will usually reveal nothing on physical and neurological examination, but the mere presence of negative neurological findings cannot in itself be regarded as indicating idiopathic epilepsy. Many types of seizures of symptomatic origin may be associated with negative examination, but the disclosure of a history of headache, of memory disturbances, of alcoholism or other intoxicants to mention only a few random examples, will suffice to arouse suspicion that the seizures may be of symptomatic origin and will lead to the appropriate studies to establish or exclude this impression. Consersely, it may be said that any patient with abnormal neurological findings, no matter how few or equivocal, must be regarded as having a symptomatic type of seizure.

In the evaluation of evidence concerning idiopathic versus symptomatic seizures, the age of onset gives valuable general evidence. Idiopathic type of seizures may develop at any age, but their tendency is to appear at some ages in preference to others. The majority occur during puberty and adolescence (10-20 years), but they may develop at any time during life. It is true that generalized seizures occurring in an adult must be regarded as being of symptomatic origin until proven otherwise. Clinical experience indicates however that it is not uncommon for idiopathic epilepsy to appear first in mature adults, though it is hazardous to derive this conclusion without careful laboratory investigation during which the patient is studied by all known methods, to determine whether organic disease of any sort is present. In general, seizures occurring before 2 years of age should be regarded as being due to some structural cause such as birth injury, congenital defects or degenerative brain disease. From 2-10 years of age idiopathic epilepsy will probably account for most cases, but trauma, intoxications, and other organic processes may be responsible. After 20 years of age symptomatic types of seizure prevail and may be due to various causes, some of which are relatively more common than others. It seems hardly desirable to consider the many causes of symptomatic seizures since those due to tumor, trauma, abscess, vascular disease, syphilis, degenerative and other processes present special problems. Once the possibility of symptomatic seizures is raised the cause will be indicated by special findings and symptoms which will lead eventually to the diagnosis.

Further light on the cause of the seizures is indicated by the type of seizure itself. *Focal seizures,* whether motor or sensory, are indicative of organic brain disease, the cause of which must be determined by the evidence. They may be caused by any of the numerous organic conditions responsible for seizures, but brain tumor is probably the most frequent offender. Trauma, abscess, porencephaly, encephalitis, metastatic carcinoma, birth injury, multiple sclerosis, hypoglycemia, and vascular disease may also be responsible for focal seizures, but some of the conditions mentioned are rare. On the basis of probabilities, brain tumor is the most likely condition in the case of an adult complaining of focal epilepsy of recent onset without a previous history of trauma or infection. The seizures may be set off by a tumor in any part of the cerebral hemispheres, but are usually the result of involvement of the motor-sensory areas, the precentral gyrus in the frontal lobe and the post-central gyrus in the parietal lobe. Infiltrating tumors are more often associated with focal seizures than are encapsulated tumors such as meningiomas. Generally speaking, the occurrence of focal seizures early in the course of the disease, before the development of increased pressure signs such as headaches and choked disc, or focal signs such as aphasia or hemiparesis, is a good prognostic sign and indicates that the tumor is of a slowly growing type, either a benign type or glioma or a meningioma, and indicates also that the tumor is near the surface. It may be pertinent at this point to point out that the complete removal of a meningioma or the resection of a glioma does not result in the eradication of the seizures. In the case of meningiomas seizures persist after operation in 15-25% of cases and the incidence is even higher in the case of gliomas. This fact, too frequently overlooked, is important in prognosis and obviously requires the continued use of anticonvulsants after operation.

Trauma plays not as important a role as tumor in the production of focal seizures, but it is a factor of significance and there are many special problems posed by the traumatic type of epilepsy. Statistics vary widely concerning the incidence of seizures in general in head injury — 4.5% (Sargent) to 34% (Denny-Brown). Though the seizures occurring after head injury develop within 1-2 years, there may in some instances be a delay of 10-20 years before seizures appear. Localized brain injury is important as a substrate for the appearance of seizures. This is usually due to a penetrating wound, but may be associated with laceration and contusion in a closed head injury. Most cases of seizures following head injury are the result of penetrating wounds of the skull, and in those instances in which the dura has been torn and penetrated the development of seizures is distinctly more frequent than if the dura is intact. Seizures, whether generalized or focal, are uncommon in closed head injuries, but they may develop as a result of laceration and contusion of the brain. They do not develop after a simple concussion. Where seizures appear following what has seemed to be a simple concussion the assumption is reasonable that laceration or contusion has occurred, probably in a silent area, and serves as the focus for the epileptic discharge. Seizures occurring in the acute states of head injury are usually the result of a meningocerebral scar but may rarely be due to chronic abscess. Focal seizures are not common in subdural hematoma.

It would be hardly profitable to review the features of the many conditions which may be associated with focal seizures, but it may be pertinent to point out that focal seizures may occur late in porencephaly even though the condition may have been long present; that they may usher in cerebral hemorrhage; and that they may follow brain infections of various sorts.

**Generalized seizures** have no localizing significance, but they frequently occur with structural brain disease. The latter must always be suspected in an adult who has developed seizures for the first time. Where organic disease of the brain is present generalized seizures are usually associated with diffuse brain damage, but not infrequently they may occur as the result of spread of the seizure discharge from a single focus, as in the case of a tumor or scar. In such instance a careful history will lead to the recognition of the focus of discharge as indicated by the aura or the symptoms of onset associated with the seizure. Failing this, laboratory studies, particularly the electroencephalogram, will provide valuable aid.

**Petit mal seizures** have no localizing significance as a rule, but are sometimes associated with a focus in the temporal lobe. In cases of hypoglycemia they are usually vague and ill-defined and often discarded as psychogenic in origin. In the majority of cases petit mal attacks are the result of idiopathic epilepsy, but they may at times be associated with focal brain disease in the temporal or occipital lobes.

There are many intoxicants which may at times be associated with seizures, but apart from lead, alcohol is by far the most important. It is still not clear what role alcohol plays in the production of seizures. It has been said that it serves as a precipitant in susceptible persons, but this amounts to no answer at all. Though the use of alcohol is no greater among epileptics than in non-epileptics, the fact remains that in about 6 to 8% alcohol seems to be the causative factor. Regardless of the mechanism, there can be no doubt that in all patients in which alcohol seems to be a factor in the production of seizures, no alcohol in any form should be permitted.

**The Problem of Heredity.** Epileptics frequently want to marry, and one is often faced with the problem of the possibilities of epilepsy in the offspring. What can one tell the partners in marriage as well as their anxious relatives? There is no doubt that the possibility of epilepsy in the offspring is greater if both parents suffer from recurrent idiopathic seizures. If one parent suffers from seizures the chances are one in twenty that epilepsy will be inherited. A good deal of study has been directed toward the EEG abnormalities in epilepsy and it has been found that in 60% of the families of epileptics abnormal EEG records can be demonstated. It is by no means possible to say, however, that this indicates epilepsy. Until more is known of the specific meaning of the dysrhythmias noted in the EEG, it is possible only to record the findings without further comment. At present it is not possible to say whether two subjects without epilepsy, but with dysrhythmia by EEG recordings will give rise to epileptic offspring. Compared with the 60% of relatives with dysrhythmia, only 2.4% of near relatives of non-institutionalized patients have a history of seizures. Persons with dysrhythmia therefore outnumber those with seizures about 25:1 (Lennox).

The possibility of the development of epilepsy in the offspring becomes one chance in a hundred (Lennox) if in the affected parents (1) a history of evidence of brain injury antedated the seizures; (2) there is an absence of epilepsy in blood relatives; (3) the seizures began later than infancy or childhood; (4) there is no predisposition to seizures in the spouse. Some light is thrown on the problem of inheritance by the study of seizures in twins. A study of 253 pairs of twins reveals that in identical twins, epilepsy developed in both twins in 66.6%, while in fraternal twins both individuals were epileptic in only 3.15% (Conrad).

Related to the problem of inheritance is the significance of seizures occurring in infancy during fever. It has been demonstrated that about 20% of patients whose seizures began at puberty or later had an isolated convulsion as an infant (Lennox), and it has been assumed that febrile convulsions in infancy may presage idiopathic epilepsy. There is no consistency in the matter however, and it is certainly true that many convulsive seizures developing in infancy during fever, teething and gastrointestinal disturbances are never heard from again. A recent study (Livingston and Kajdi) reveals an incidence of 10% of 800 cases which developed seizures for the first time during a fever. From this survey it appears to be true that the age of onset of the seizures is not as significant as their number. All patients whose attacks were always febrile returned to normal, whereas those with an epileptic background continued to have convulsions.

**The Electroencephalogram in Epilepsy.** The introduction of the EEG into clinical neurology has been followed by its wide acceptance in the diagnosis and study of epilepsy. Its use has been associated with erroneous assumptions which assume considerable clinical importance. Among these are the belief that the EEG is abnormal in all cases of epilepsy, and that a negative EEG in a suspected case excludes the possibility of epilepsy. It may be pertinent therefore to consider these as well as other assumptions, in order to classify the role of the EEG in the diagnosis of epilepsy.

The EEG, like any other laboratory test, is most useful only in confirming the diagnosis of epilepsy. Under most circumstances, a careful history of the seizures remains still the most important step in the diagnosis. In doubtful cases the EEG reaches its highest state of usefulness, since an abnormal EEG may determine the presence of epilepsy as opposed to a psychogenic reaction. The difficulty arises from the fact that EEG records are in most cases, interseizure records, taken at a time when the patient is having no convulsive seizures, either with or without anticonvulsants. If it were possible to take records during seizures the incidence of abnormal readings would be extremely high, since in those cases in which it has been possible to take records during seizures the EEG has practically always been abnormal and has been distinctive for the type of seizure experienced. The highest incidence of abnormality in interseizure records is found in the petit mal attacks, which are abnormal in 85% of cases. Abnormal waves are found in 42% of psychomotor seizures. In cases with grand mal seizures the EEG in the periods of freedom from attacks is abnormal in only 15% of cases. For purposes of emphasis it may be repeated that the EEG is normal in 15% of petit mal cases, in 58% of cases with psychomotor seizures, and in 85% of patients with grand mal, during the interseizure period. If in addition to this, it is recognized that about 15% of normal subjects have an abnormal EEG, it then becomes clear that though the EEG is of great importance in the diagnosis of epilepsy, greater importance must still be given to the clinical history of seizures.

Furthermore, while there is a high degree of fidelity between the type of seizure and the EEG abnormality, the fact remains that this is not always the case and that a petit mal pattern may be found in patients with grand mal seizures and vice versa.

The EEG in epilepsy is valuable under the following circumstances: (1) in confirming the diagnosis of epilepsy, bearing in mind the high incidence of normal readings in interseizure records for some types of attack; (2) in the differentiation of epilepsy, particularly the petit mal and psychomotor types of seizure, from psychogenic episodes. In such instances the history is often inconclusive and the presence of an abnormal EEG may establish the diagnosis; (3) in disclosing foci of discharge in the cortex, thus aiding in the diagnosis of symptomatic epilepsy. While it is helpful in judging the effects of treatment, it is not as valuable as clinical observation, since (1) seizures may persist in the presence of a normal EEG; (2) the EEG may change relatively quickly and be normal at one time and abnormal at another; and (3) an abnormal EEG may be present in cases with well-controlled seizures.

**Treatment.** The treatment of idiopathic epilepsy is entirely symptomatic, since it is clear that it is seizures which are treated and not their cause. Despite this, it is possible to perform a satisfactory job of controlling seizures provided sufficient medication is given and the proper type of treatment prescribed. Most cases of epilepsy are undertreated rather than overtreated because physicians are sometimes timid about prescribing dosages sufficient to control seizures. The tolerance of epileptics for most of the drugs available is often quite high and there should be no hesitation in giving enough medication. Failures in treatment result also from improper preparation of the patient, who must be made to recognize frankly the nature of his disability and the importance of faithfulness in taking his medication precisely as prescribed. No liberties should be permitted in changing the time or amount of medication without the permission of the physician. The doctor has a serious responsibility not only in this regard but in choosing the proper type of medication, since it is common knowledge that not all epileptics will respond to similar types of treatment. Disappointments in treatment can be avoided also by the use of more than one drug when the conditions require it. It often happens that a single drug may be only partially effective in controlling seizures, whereas the addition of other compounds will be more effective. This requires careful study of the patient's response to medication and points out the principle that patients with seizures cannot be discharged after a single survey. They must be followed frequently until the effective combination is found. Once this is established it should not be changed except on the advice of the doctor.

Finally, disappointments can be avoided if the patient and the family are warned that the determination of the proper dosage and combination of drugs may take time and effort and will require frequent visits before it can be definitely established.

The choice of drugs in grand mal seizures is greater than it was only a few years ago because of the development of effective new compounds. *Dilantin Sodium* has provided physicians with an effective compound in the control of generalized seizures. In dosages of gr. 1¼ given 3-6 times daily, it is capable of controlling seizures either alone or in conjunction with other drugs. Its side-effects, such as gum hypertrophy, dermatitis and ataxia, make its use somewhat limited under special circumstances; so that when it is prescribed, care must be taken to avoid undesirable reactions. If these develop in a patient in whom seizures are controlled by Dilantin Sodium, the drug may be removed completely, or the dosage may be reduced and the drug fortified by the addition of other drugs, particularly in those cases in which Dilantin Sodium appears to be the most effective remedy available. Unfortunately, there is no means of predicting which patients will develop reactions, so that careful supervision is always necessary. It is obviously of little value to control the seizures in an epileptic if the price of such control is a disfiguring gum hypertrophy. *Mesantoin* is said to be fully as effective as Dilantin Sodium in the control of grand mal seizures, without the side-reactions of the latter. My experience has been that it is not as effective an anti-convulsant as Dilantin, but it is a useful drug. It may be used as the drug of choice in a given instance, and if found not to be effective, may be abandoned or used in conjunction with Dilantin Sodium. Its greatest use, in my estimation, is as an adjunct form of treatment. Not yet available, but in the process of clinical trial, is a new drug *Phenurone* (phenacetylurea) which has a low toxicity, possessing slight sedative action, and associated at times with side-reactions such as parasthesias, palpitation, insomnia, and intensification of preexisting personality deviations in patients with psychomotor seizures. It is given in dosages of 500 mg. 3 times daily with meals, with gradual increase of the dosage to 6 tablets daily. For children one-half the adult dose is recommended. It is effective in controlling grand mal seizures, appears to be as effective as Dilantin Sodium and Mesantoin, and is sometimes effective in instances in which these drugs have failed. Its special value however appears to be for psychomotor seizures, but it must be used cautiously in such cases. Still one of the most effective drugs in the treatment of epilepsy is *Phenobarbital,* whether used alone or in conjunction with other drugs. It is used much too cautiously because of the drowsiness and the slowing of intellectual responses, but epileptics have a high tolerance for the drug and in those cases associated with side-effects, Benzadrine or Dexedrine may offset the mental sluggishness and drowsiness in part. For some patients Phenobarbital is the only effective drug in controlling grand mal seizures, and the same is true in the control of petit mal. It should be used in conjunction with other drugs, since there are many patients who fare better on Dilantin Sodium and Phenobarbital, than on Phenobarbital alone. *Bromides,* because of their toxic reactions, have fallen into disrepute but they remain one of the most useful drugs available for the control of seizures. Their best use, in my experience, is to be found in conjunction with other drugs, and the addition of small doses of bromide in a stubborn case may result in complete freedom from seizures. If acne develops, the drug may be staggered, may be withdrawn for short periods regularly, and again renewed. Some patients respond better to bromides than to any other drug, just as in the case of Phenobarbital.

**Tridione** is useful for petit mal but has little or no effect on grand mal. It is given in dosages of gr. 5 three to six times daily. Its side-reactions consist of skin rashes, photophobia, and agranulocytosis, of which the last is by far the most serious. Because of it, careful check must be made periodically of the blood count. It has a beneficial effect on petit mal seizures, and appears to be more useful in children than in adults. It should be tried in patients with seizures of the petit mal variety, but should be stopped if agranulocytosis develops.

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### Discussion

Dr. K. M. Corrin (Wilmington): One sees in convulsions a mechanism observed for years, but with little understanding of its nature. Experimentally, one may develop or prevent a convulsion, or stop a convulsion midway in the attack, with the use of amyl nitrite to drop the blood pressure; and yet the mechanism of the convulsion remains unknown.

Limited knowledge of this phenomenon is due to two reasons. First, the difficulty of work with the brain and the nervous system, especially intracranially; and second, the scarcity of trained workers in this field.

In convulsions, one sees a typical example of how in medicine, especially in psychiatry, the physician starts with the mythical idea of etiology; then swings to the philosophical and psychogenic thought, and at last works out the mechanism on a logical organic basis. From study of the convulsion produced by electrical shock, chemicals, or in other ways, it is generally understood that basically a convulsion is physiological and definitely organic in nature. The time is not far distant when probably this disease, and many other psychiatric disorders, will be placed soundly on an organic basis. Psychiatry is gradually swinging away from the idea of a psychogenic origin for the disease of the brain, back to the sound scientific organic basis, the same as for all other forms of disease. Even in dementia praecox and the manic-depressive diseases, which for years have been considered largely psychogenic in nature, research tends to show that the mechanism is founded on an organic basis.

As Dr. Alpers so well expressed, the sheet anchor of treatment remains phenobarbital. It has all of the qualities of a good drug. It is cheap, easily obtained, doesn't deteriorate rapidly, is effective, and retains its therapeutic effectiveness over time. The great majority of patients do better when taking phenobarbital, if it is skillfully administered, (correct dosage) than when taking any other drug. It may occasionally be combined to advantage with dilantin sodium, tridione, or other drugs which seem to have a little more specific effect for certain types of convulsions. Many fear phenobarbital, feeling that it causes mental deterioration, or that it is habit forming. I have never known it to become habit forming or to produce mental deterioration. I think that misconception has come from the fact that when phenobarbital was first used it was used with chronic epileptics who were having severe convulsions. It was the disease (the intracranial pressure and anoxemia caused by the convulsion) and not the medication causing the deterioration. If one gives enough phenobarbital to control the convulsions, ½ to 1½ grains, four times a day, with an effective dose of magnesium sulphate once a week, combined with proper food and fluid intake and the correction of bad habits of living, most patients stabilize themselves with little disorder of their mental faculties. The therapeutic objective is to correct the intracranial circulatory disorder producing the convulsion.

Dr. Fritz Freyhan (Farnhurst): I think it is a great art to present as complex an issue as epilepsy.

One of the remarks which I would like to make is the reluctance which we often seem to display in making a diagnosis of idiopathic epilepsy. Actually it seems that the prognosis in a classical case of idiopathic epilepsy is so much better than in a case of symptomatic epilepsy where an unknown disorder or tumor or infection may be behind the pathology. But there is, because of the so-called mysterious aspects of epilepsy, sometimes what I would call an "emotional allergy" to making a diagnosis of idiopathic epilepsy, although therapy is quite efficient and the prognosis favorable.

There are two questions which I would like to ask Dr. Alpers. One, about the advisability of routine neuroencephalogram. I know that it has often been done on a routine basis even if there is no evidence of a neurological disorder, brain lesion or tumor.

Other question is advisability of spinal drainage in epileptic status, especially, perhaps, precipitated by alcoholism. It seems to be the opinion of many observers that there is brain edema and marked increased pressure which is benefited by spinal drainage.

Another thing that I would like to mention is the great help of the sodium-amytal-method to distinguish between the psychogenic, i. e. the hysterical, and the organic seizure. I think we have seen many cases, especially during the wartime, where diagnosis of epilepsy was made, and where the simple method of the sodium amytal interview very clearly demonstrated the psychogenic background.

I have seen many of these cases myself. I was quite impressed how easy it often is to produce the psychogenic material and even to precipitate a so-called seizure while the patient is in the hypnotic state induced by intravenous injection of sodium amytal.

I don't mean to say that this method is the final answer to the differential diagnosis, but I don't think it is overoptimistic to say that over 50 per cent of the cases with psychogenic background can very easily be demonstrated.

I also am very much impressed with the effects of benzedrine in those cases where we have to give a great deal of phenobarbital. I am of the opinion, as Dr. Alpers has stated, that phenobarbital in many respects is the most efficient drug. I think if you would early in the morning give 5 milligrams of benzedrine and perhaps again at noon, the drowsiness and the intellectual retardation of which the patient so often complains can be completely neutralized.

Finally, I would like to stress the importance of psychotherapy in every case of epilepsy. I am not talking about any fancy system or involved method of psychotherapy, but one based on common sense procedure. I think the average epileptic, as soon as he becomes acquainted with the fact that he is an epileptic, reacts to that fact with various emotional states of tension and other symptoms.

I think that psychotherapy is one thing we should never neglect, to always give as much support as possible from the emotional viewpoint.

**Dr. A. L. Ingram, Jr.** (Wilmington): I would like to add my appreciation to Dr. Alpers for a very informative and precise presentation of the problems current in epilepsy today.

With reference to the electroencephalographic studies in suspected cases of epilepsy, I think it should be emphasized that the history and the clinical picture are of greater significance than a single electroencephalographic tracing. In arriving at a specific diagnosis of cryptogenetic epilepsy, I feel that it is often overemphasized. This becomes more apparent, I think, when we refer back to Dr. Alpers' remarks about the incidence of abnormal tracings in the general population; I think it is some 10 per cent and some 15 per cent of the known or proven epileptics have normal tracings.

Too often following the occurrence of an initial seizure in a patient we will be led away from the true diagnosis by having an electroencephalographic tracing done and finding some sort of abnormality. I say some sort of abnormality, because so often, as Dr. Alpers pointed out, we cannot assign it to a definite type of seizure associated with idiopathic epilepsy.

However, there is much to be said, I think, for the follow-up value of the electroencephalographic findings. Upon the establishment of a diagnosis of epilepsy, the disease being under drug control, it is quite valuable at the end of nine months or a year to have further tracings which will lead us to indicate a suppression of the dosage or reduction of the dosage at that time. I don't think we can overestimate the value of the EEG then.

With regard to the age of onset, which Dr. Alpers mentioned, I know that quite recently we had a case which involved a 44-year old man who had apparently never had seizures before. However, at the age of 41 he began experiencing chiefly nocturnal seizures which were quite misleading in that they appeared to be of psychogenic origin. Apparently they had been written off as of psychogenic origin until further studies were undertaken, and we had a rather typical type of tracing. Then there appeared the information that somewhere under four years of age he had experienced a series of convulsions.

So we thought we were dealing with a case of cryptogenetic epilepsy. There had been a period of some 38 years between attacks, and I think that emphasizes the point that although there is a general blanket statement that can be made about the age of onset of epilepsy, we cannot dismiss a case just because it is too early or too late in that age group.

**Dr. Howard S. Riggin** (Seaford): I would like to ask if no one has laid any stress on the diet in treating these patients that you know are epileptics. We do know that gastrointestinal irritation has precipitated epileptic attacks. I have one case in mind where the patient got rid of maybe 25 or 30 large ascariasis Nematoda. I followed the case for five years and he had no more attacks to my knowledge.

So what stress do you lay on gastrointestinal irritation? An infant will have an overloaded stomach or gastrointestinal irritation and will have what we call a spasm, somewhat similar to the epileptic attack, although it is not epileptic. What, in your experience, do you think is a sensible diet, that is, what to avoid in the line of eating in these cases that might precipitate an attack?

Dr. G. J. Gordon (Farnhurst): In a recent article I read that in children, shunting of the arterial blood flow into the venous system has significantly reduced the number of seizures in a number of instances so treated operatively, which makes me think that perhaps the role of the blood flow might play a considerable part in seizures, especially in idiopathic epilepsy in some cases at least, and I wonder to what extent one might describe, even in the absence of a pathological brain wave tracing, the existence of vago-vagal attacks, like fainting spells, followed by short periods of confusion, to epilepsy.

Dr. Alpers: I was very much interested in the comments that were made in regard to some of the points which were brought up. Dr. Corrin just remarked incidentally about the problem of deterioration occurring as a result of repeated seizures. I would like to say a few words about that, because it is a problem that comes up in the management of almost every case. One of the things that you have to face with patients, once you have gotten them accustomed to the fact that they are going to have seizures and are going to have to take medicine probably for the rest of their lives, is whether this will lead to any change in the patient.

What they usually mean is, do they become mentally sick or deteriorate? I think it can be said, on the basis of the evidence available, that repeated seizures in themselves will not cause deterioration, that deterioration will come very much more rapidly in those cases where there exists already organic brain disease, whether that brain disease is congenital or whether it is the result of some process which is responsible for the seizure. But the incidence of deterioration is very much higher by actual study in those cases in which organic disease already exists, and the occurrence of deterioration merely as the result of seizures is not very common.

I was very glad that Dr. Freyhan brought up the question of psychotherapy. I would like to comment on that first, although it was the last thing he mentioned. I suppose psychotherapy is not the proper term for it. It is just simply a question of sitting down and discussing with the patient and his family the fact that he has epilepsy, getting him to accept it, outlining for him a course of treatment which will clarify the number of his activities, what he can do and what he cannot do, and I think that in that particular role the physician has to take an authoritative position. He must use all the prerogatives of his office to stand on what he thinks is right. Nothing that will harm the patient should be permitted, no working around machinery, no horseback riding, no swimming, until you feel absolutely certain the seizures are under control. Of course, no automobile driving should be allowed. That usually causes a good deal of difficulty, but it can usually be settled by telling the patient that it is your duty to report to the state police the fact that he has seizures, that you would not like to do it, but it would be better for him not to drive his automobile.

Those are the particulars in the control of seizures, but the most important thing — and I think the thing which Dr. Freyhan had in mind — is the fact that it is necessary to get parents and patient to accept an extremely traumatic diagnosis. The diagnosis of epilepsy, with all of the social connotations which it carries with it, is a very difficult point for them to accept, but I have found with the increasing publicity of these days and the dissemination of pamphlets and the easy reading in the newspapers of things having to do with seizures, that it is very much easier to get patients to accept the diagnosis, and in this instance, at any rate, frankness is very much better treatment than dissimulation.

I don't do routine encephalograms in my patients any more. We used to in cases of epilepsy, but in those cases which appear to have typical idiopathic paroxysms and dysrhythmia an encephalogram is not necessary unless there is some reason for it, but in the case of all adults, regardless of whether the findings are negative or positive, I think a neuroencephalogram is indicated.

I have had no experience with spinal drainage as far as epilepsy is concerned, and I have no opinion on it.

Dr. Ingram brings out one point, namely, that it is not sufficient to be content with a mere electroencephalogram study. I would heartily agree with that.

With regard to Dr. Regan, I can't indicate any diet infants should go on in order to avoid spasms, but I think he brings up an extremely interesting and important matter. There are some young patients with epileptic seizures in whom the only effectual treatment in control of the seizures is a ketogenic diet. It is a means of controlling the seizures in some cases.

Dr. Gordon's remarks concerning blood flow are very interesting, but I don't think I can add anything.

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## THE EFFECTS OF EARLY AND LATE DIAGNOSIS ON THE RESULTS AFTER BRAIN TUMOR SURGERY*

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It is generally understood that ideal surgical management of brain tumors cannot achieve good results in about 20% of cases because of either the location of the tumor or the cell type of which it is composed. It is little understood that the results of neurosurgery are also impaired in some 25% of cases because the patient comes to operation relatively late in the course of his disease. A plea for early diagnosis and a discussion of the means to this end are clearly in order. One would think that the difficulty in early diagnosis would not be evident in those patients with textbook symptomatology. This is not the case.

For example, Mr. H. K.'s history included the following symptoms: (1) 4 months progressive headaches, diffuse and increasingly severe, (2) 1 month occasional vomiting at time of headache, (3) 5 days increasing mental dullness. Neurological examination showed: (1) patient stuporous, occasionally responded to simple commands, (2) no papilledema, (3) pupils reacted poorly, (4) weakness of left face, positive Babinski on left. Skull films showed a definite shift of the pineal calcification toward the left. A right frontal lobe tumor, subsequently proven to be an oligodendroglioma, was found and grossly removed in its entirety, in a block of tissue which included the anterior two-thirds of the right frontal lobe. The patient's confusion gradually cleared and he had an uneventful convalescence. Three years later, a slight weakness of the left face is his only residual. He is able to work as an accountant.

The result here may be contrasted with that in the case of Mrs. B. K. She was admitted with this history: (1) 12 months' occasional fainting spells, (2) 2 months' increasingly severe headaches, (3) 2 weeks' projectile vomiting, (4) 8 days increasing mental confusion. Neurological examination showed: (1) marked disorientation, (2) 3 diopters papilledema bilaterally, (3) right pupil dilated, (4) increased reflexes on left, including Babinski. Skull films were not helpful. There was no pineal calcification. Ventriculogram showed a right frontotemporal mass lesion. At operation, a right sphenoid ridge meningioma was exposed and removed. The patient remained mentally sluggish, after successfully passing through the immediate postoperative period. She died of pulmonary embolism 29 days after operation, a complication which can be blamed on her continued depressed activity.

Of the last 200 cases of verified brain tumors, admitted to the service of Dr. Francis C. Grant, at the Hospital of the University of Pennsylvania, 31% showed mental dulling, characteristic of critically increased intracranial pressure. (See table 1). Review of the his-

Table I

Mental Dulling Preoperatively and Operative Mortality

| Status | No. Patients | Op. Mortality |
|---|---|---|
| Comatose | 9 (4%) | 89% |
| Stuporous | 21 (11%) | 61% |
| Dull | 32 (16%) | 42% |
| Alert | 138 (69%) | 12% |

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*Read before the Medical Society of Delaware, Wilmington, October 11, 1949.

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tories of these patients shows that progressively severe headaches have always been a complaint (average 4 months, never less than 2 weeks). Vomiting has been added in 61% of the cases. A neurological symptom, such as, seizures, paralysis, visual loss, unsteadiness of gait, or personality change, has occurred with progression in 80%. The mental clouding is, therefore, always a late development, present for several days, and superimposed upon what are clearly progressive symptoms of intracranial disease.

These changes in the mental state are graded and their degree greatly influences the operative mortality. Patients with mental dulling who are still able to respond to simple command have a 42% chance of fatality after operation. For those who have progressed to stupor (unresponsive except to painful stimuli), it is 61%. If complete unresponsiveness (coma) has supervened, it is 89%. This is in striking contrast to the 12% mortality which obtains for all brain tumor cases which have not progressed to the stage of mental dulling.

It is clear that a neurosurgical clinic which labels stuporous cases as inoperable will have a low operative mortality rate. However, under such a regime, Mr. H. K. would have perished. We feel that we must always make an effort in a potentially salvageable case despite the statistics, which predict a probable operative mortality, as in the case of Mrs. B. K. The unfortunate circumstance is that review of the history always shows that the diagnosis could easily have been made a week or two earlier, and the patient admitted when the probability of an operative mortality was 12%.

Just as tragic as the needless death of the patient is the occurrence of irreversible physical handicaps, which could have been prevented by earlier diagnosis.

Mr. C. D. had complained of increasing visual difficulty for 3 months. He had evidence of slight endocrine dysfunction in a loss of libido. He had a bitemporal hemianopsia, wth visual acuity of 20/40 on each side. Skull films showed a ballooned sella turcica This permitted diagnosis of a pituitary adenoma and a cystic lesion, underlying the optic chiasm, was evacuated. A striking improvement in acuity, to 20/20 and 20/30, as well as in fields, occurred postoperatively. All of these pituitary cases must continue to have such testing done at 3 month intervals. An occasional patient will show evidence of fresh activity of the tumor. This can be forestalled by x-ray therapy rather than re-operation, if the fresh progression is detected early. One can be fairly certain of preserving serviceable vision in these patients for years to come, if the precaution of 3 monthly interval, follow-up examinations is adhered to consistently.

In contrast to the aforementioned case, Mr. E., a 69 year old male, had had failing vision for 2 years. He was treated for sinusitis. An ophthalmologist was finally consulted and made the diagnosis of pituitary disease on the basis of a complete temporal hemianopsia in the left eye, where finger counting only was possible, with optic atrophy and blindness to light perception on the right. After evacuation of a cystic adenoma, this man recovered an acuity of 20/100 on the left and was able to count fingers in the nasal field of the right eye. He became able to find his way about and to read newspaper headlines, but he had a severe, permanent, visual handicap, owing to late diagnosis.

A similar permanent visual loss may occur in those patients who develop slowly increasing intracranial pressure with papilledema, but continue in relatively good health, except for recurrent headaches.

Mr. T. C. had had increasingly severe headaches for 6 months. He had noted visual clouding for 3 weeks. Vomiting had occurred on several occasions in the week before his admission. Examination showed 5 diopters of papilledema bilaterally, with visual acuity of 20/40 and 20/60. Neurological changes were slight but there were nystagmus, on looking to the right, and slight adiadochokinesis of the right hand. Suboccipital exploration revealed a cystic astrocytoma in the right cerebellar hemisphere. Convalescence was satisfactory and the papilledema subsided. However, there was continued visual loss, so that 6 months after operation, this man had light perception only.

By contrast, R. R., a 6 year old boy, had a 2 year history of vomiting, to suggest increased intracranial pressure, with cerebellar and brain stem signs and bilateral papilledema of 5 diopters. X-rays of the skull showed marked suture separation. Suboccipital exploration revealed a large, cerebellar astrocytoma. This boy had no visual loss preoperatively and vision is 20/20 at the present time, 13 years later, and he is playing football at college.

It is evident that visual loss is by no means a constant accompaniment of longstanding papilledema. It does happen in 25 to 30% of these cases and usually continues insidiously after intracranial pressure has been relieved. These patients are handicapped as the result of late diagnosis, with a history that always has suggested increased intracranial pressure over a period of months.

Mrs. C. D. M. gave a history of loss of hearing in the left ear, beginning 1 year previously in association with tinnitus. She had continued very well in other respects, except for occasional left occipital headache. Examination showed a healthy and alert woman, without papilledema. The loss of eight nerve function (both deafness and absent vestibular response on caloric testing), plus fifth and seventh nerve involvement and minimal cerebellar signs, all on the left, made certain a diagnosis of cerebellopontine angle tumor. The x-ray changes, showing enlargement and erosion of the internal auditory meatus, were definite in this case, but are not always present and are not necessary to make a positive diagnosis with a picture of fifth, seventh, and eighth nerve involvement. At operation, an acoustic neurinoma was found in the left cerebellopontine angle. This patient is undoubtedly permanently cured and her only residual is left deafness and a left facial paralysis, which is no longer disfiguring because of a facial-hypoglossal anastomosis.

Contrast this case with Mrs. M. M., whose deafness and tinnitus had begun 5 years previously, and who had had severe headaches for 4 months. She showed fifth, seventh, eighth, ninth, tenth, and twelfth nerve involvement on the right and had severe cerebellar signs, including marked disturbance of equilibrium. There were also 2 diopters of papilledema bilaterally. In this case a huge meningioma was found, arising from the right cerebellopontine angle and filling one-half of the posterior fossa. A total removal was obtained and the patient is now able to run her household, after a fashion. She is badly crippled by motor weakness of the left extremities, ataxia of the right extremities, and marked difficulty in speech, all of which are permanent. Had this woman been operated in the fourth, instead of the fifth, year of her disease, the life which was saved would have been a far more useful one.

Many similar instances can be given of patients with permanent cure of benign meningiomas who will always have partial aphasia or partial hemiparesis, because they were first seen late in the course of their disease.

In summary, an effort has been made to demonstrate the ways in which late diagnosis profoundly detracts from the results of brain tumor surgery. Early diagnosis can be accomplished if the following points are kept in mind:

1. Progressively severe headache may be the only symptom of brain tumor. Careful neurological examination which includes inspection of the optic discs and visual fields will usually reveal changes, but patients can reach a critical stage of increased intracranial pressure without such changes. The skull films may show focal changes in the skull or a shift of the pineal calcification, but they may provide no clue to a progressive situation which will soon become critical. Persistent vomiting in children is a suspicious symptom of equal importance.

2. Visual loss, when not clearly explained by local pathology, should always be investigated by ophthalmoscopic examination and visual fields.

3. Any other slowly progressive neurological sign, such as deafness without local cause, or increasing clumsiness of an extremity, demands careful neurological evaluation.

4. Seizures, beginning in adult life, or mental changes even in the absence of neurological signs, should nevertheless make one suspect brain tumor and arrange for investigation which will settle this possibility.

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## Discussion

Dr. P. D. Gordy (Wilmington): I would like to add my thanks to Dr. Nulsen for this extremely valuable paper. I think that it is particularly important to emphasize the early diagnosis in intracranial lesions, because of its profound effect on the prognosis.

As has been pointed out by Foster Kennedy "the dice of the gods are loaded," and it is up to the neuro-surgeon to accomplish everything he possibly can, and one of his greatest aids is early diagnosis.

With regard to the point Dr. Nulsen mentioned, in which local expansion or local pressure may produce irreversible damage, I would like to call attention particularly to the lesions seen in children, namely, the craniopharyngiomas or Rathke's pouch cyst, in which frequently the visual loss, which may be the first presenting symptom, is not picked up until severe deterioration has taken place.

I have a little youngster in mind, when I mention that, who came to the clinic in Ann Arbor and at operation a small lesion was disclosed beneath the chiasm, which could be completely removed. However, by the time the child had come to us visual loss was almost complete. There was a question among the opthalmologists as to whether or not, there was any vision left at all. Postoperatively, he did begin to show some return.

I think that the craniopharyngiomas are among the lesions in children in which early diagnosis may give very gratifying results.

Of course, it is well known that in various types of intracranial lesions papilledema may not be present at all, so that in the absence of papilledema the investigation should not stop where other changes indicate that there may be something present, such as focal neurologic changes, headaches, and so on.

We feel, as Dr. Nulsen has mentioned, that every possible attempt should be made in these lesions, no matter what the patient shows when he enters the clinic. Actually, we hope to get them in the very earliest stages.

I have another case which comes to mind in mentioning that; a 31 year old Negro who entered the hospital comatose, hemiplegic, and who presented a very discouraging picture. We felt that we probably would be unable to accomplish a great deal at operation but that we should "take a shot" at this lesion. A 165 gram meningioma of the sphenoid ridge was discovered and completely removed, and this patient at present is back working in an automobile factory. He was one of those who did escape permanent damage.

I would like lastly to mention something which I think is of great importance in assisting in the early diagnosis of lesions — the electroencephalogram. Recently, in a great many clinics, a considerable amount of work has been done on the localization of tumors, as well as on the various patterns of dysrhythmia. The electroencephalogram may assist the surgeon greatly, not only in the suggestion that there may be some intracranial lesion present, but through painstaking localizing procedures, the extent and depth of the lesion may be given to the surgeon. We have found this procedure to be of great value.

Dr. G. J. Gordon (Wilmington): I have been very much interested in hearing this paper, and I thank Dr. Nulsen for covering the subject, because we in the hospital are frequently confronted with cases of this sort, and I must say that we seldom, if ever, have had any difficulties in diagnosing the condition although frequently mental symptoms tend to obscure completely organic symptoms.

Naturally, mental symptoms are usually those of the confused type. The patient is very slow to respond. He will be in an extremely difficult position as far as the expression of complaints is concerned, and thus often it is very difficult to get at the bottom of his difficulty.

However, it is not too difficult at times to make the diagnosis of brain tumor when one is completely acquainted with the general symptoms of brain tumor or mass lesion of the brain; among those we register papilledema, increased spinal fluid pressure, a rapid drop of spinal fluid pressure when spinal fluid is cautiously removed, which results in distinct change in the so-called Ayala index. In addition, electroencephalography may reveal a change of the graph, and x-rays may show resorption phenomena in the bony contours of the skull, especially of the sella turcica, clinoid processes, etc.

Unfortunately, mental symptoms are frequently accused as evidence of a definite locality of the brain lesion, which I think must be guarded against. One cannot be too cautious in stating that most of the time the mental symptoms are only the general symptoms of brain tumor, but have no distinctive localizing value.

Furthermore, in the evaluation of so-called localizing signs one must use considerable caution in assessing their exact topical meaning. I remember distinctly a case in which a patient showed pyramidal signs, and, of course, the neurosurgeon I talked to expressed the view that this must be an affection of the motor strip and a tumor located above the tentorium, and then on operation they found an infratentorial tumor.

These are just thoughts I have to add to the interesting paper presented by Dr. Nulsen, and I want to again express my appreciation of his interesting paper.

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# PERSONALITY, PHYSIQUE AND DISEASE

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The brilliant achievements in the field of bacteriology, the fruitful researches in the study of nutrition, the recognition of the vitamins, and the untangling of the web of information concerning the role and functions of the endocrine glands within the past few decades have pointed out factors in the production of disease hitherto unknown. So startling and important have been these discoveries that there has been a tendency on the part of a vast majority of physicans to think of the mechanisms of morbid conditions in terms of infection, derangement of metabolism, neoplastic activity, or physiological dysfunction in one direction or another.

Many of the unsolved problems of disease will undoubtedly be conquered when attacked from this point of view. There are certain questions, however, that remain unanswered, despite the most precise objective methods of investigation. We do not know as yet, for example, the meaning of resistance and susceptibility to disease, or what underlies national and racial immunity. One person is afflicted with a particular disease, while another in the same surroundings is left untouched. The relative values of the two variables, environment and individual, in the complex known as disease, continues to be an enigma.

The solution of these riddles lies buried deep in our heritage from the past, and in the peculiarities of structural make-up, physical and chemical processes, glandular secretions and psychologic outlooks which go to form the sum-total of the human constitution. This doctrine of constitution and its relationship to disease is an old one, going all the way back to the ancients. As often as it has been seemingly disproved, it has bobbed up again within recent years with fresh evidence as to its veracity. It is now possible to make definite correlations between personality types, different physiques, and certain pathological states affecting the body. Psychiatry has devoted its attention for some time to these inter-relationships, and has contributed many important studies and investigations in this field.

## Types of Body Build

From the ancient Greeks to the present day there have been repeated efforts to define different types of body build and to speculate on their significance. It is not necessary to enumerate the various classifications of physical constitutions which have been proposed through the passing years. Most of them have proved to be of no scientific value. The work of Kretschmer (1), however, should be particularly mentioned because of its importance. About twenty-five years ago, after careful and exhaustive measurements on a large number of his patients in a mental hospital in Bavaria, he described four types of physique which he called asthenic, athletic, pyknic and dysplastic.

The *asthenic* individual is tall, angular, sparsely built, with a long, thin neck, drooping shoulders, a flat, narrow chest, lean extremities, tapering fingers and delicate skin. The person of *athletic* physique is recognized by his wide shoulders, a superb chest, a trunk which tapers in its lower regions, strong and shapely legs, small waist and hips, a flat abdomen, large bones and prominent muscles. The *pyknic* individual has a short, stocky and rounded figure, a soft and broad face, a thick and massive neck, with little or no muscle relief, a tendency to the accumulation of fat about the trunk, florid skin, and often premature baldness. The *dysplastic* is characterized by various aberrations, among which one finds the myxedematous product of hypothyroidism, growth disorders of pituitary disturbances, infantilism and eunochoidism.

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In recent years, the contribution of Kretschmer has been overshadowed to a considerable extent by the investigations of Sheldon (2). He felt that Kretschmer's methods were not accurate and his observations too impressionistic. Sheldon developed a scheme of photographic recording which could be interpreted on a basis of graduated scoring. He emphasized the importance of the embryonic tissues in the systems which developed from them, and described what he believed to be the three primary components of structural variation, namely, endomorphy, mesomorphy and ectomorphy.

The *endomorph* is characterized by soft roundness throughout the various regions of the body and by massive digestive viscera. The *mesomorph* is a person whose physique is normally heavy, hard and rectangular in outline, with a predominance of bone and muscle. The *ectomorph* is a slender, delicately built individual, with elongated features and a flat chest. These three groups correspond roughly with the pyknic, athletic and asthenic types of Kretschmer respectively. Sheldon did not describe a dysplastic type. He classified the manifestations of dysplasia as secondary variations.

The primary or basic components mentioned above were regarded by Sheldon as *continuous* variables which are present in different amounts in every physique. He discarded the idea, therefore, of specific "types" of body build, after the manner of Kretschmer, and patterned the morphological components into what he called the somatotype of the individual. The somatotype, by the use of a special scale devised by Sheldon, expresses the approximate strength of each of the primary components in the individual under examination. Thus, he evaluated 76 different somatotypes, to which he thinks may be added others. Somatotyping provides the basis for a morphological classification that is comprehensive and which may be manipulated statistically. Furthermore, it involves a continuous distribution of structural variables in which every physique has a place, and the establishment of a norm becomes a routine.

## PHYSIQUE AND DISEASE

It should be pointed out here that definite correlations can be made between physical structure or body build and certain pathological conditions. This has been noted many times in numerous ways. Through the centuries clinicians have repeatedly emphasized the so-called diathesis of the patient in relation to disease. We have long been familiar with the terms "phthisicus habitus"; "fair, fat and forty"; and others, which indicate in a rough way that this problem has always been appreciated in medicine, to a certain extent at least.

The above observations have, until recently, rested upon what might be termed clinical hunches. By painstaking and detailed investigations of the morphological attributes of man, however, Draper (3) has been able to demonstrate the tendency of certain diseases to occur with striking frequency in some groups, and relative rarity in individuals constituted differently. Thus, he has delineated a gall bladder race, a duodenal and gastric ulcer race, and a pernicious anemia race.

According to Kretschmer, the asthenic body build is present in 46 percent of schizophrenic patients, the remainder being distributed particularly among the athletics and dysplastics. He also found the pyknic type in 84.6 percent of his patients with manic depressive psychosis. These observations are of considerable significance in psychiatry.

It is also the opinion of Sheldon that some clinical diseases are unquestionably related to physical build. He confirmed the work of Draper on gall bladder and ulcer patients. Thus, victims of both duodenal and gastric ulcer tend to be high in the third component or ectomorphy. Persons with gall bladder disease are conspicuously of endomorphic predominance. The poliomyelitis cases who become afflicted with the paralytic complications of the disease are principally mesomorphs. There appears to be a remarkable immunity to all forms of cancer among the ectomorphs.

In a statistical review of his autopsied material, Freeman (4) noted a high incidence of tuberculosis in asthenics, the frequent occurrence of malignancy and intestinal disorders in the athletics, and a preponderance of diabetes, hemorrhagic pancreatitis and circulatory diseases in the pyknics. The dysplastics in his series were so few in number that they did not show a strikingly high percentage for any particular pathological lesion.

## Personality Types

Numerous attempts have also been made to classify people according to the types of temperament or personality which they exhibit. Humanity, in general, has been roughly divided into two well-defined groups on the basis of their introversion or extraversion. These terms have now come into common usage, not only by psychiatrists, but by the laity as well. It is obvious, of course, that no one person is either completely introverted or entirely extraverted. In all of us, however, there are perhaps sufficient predominating characteristics of one or the other type to warrant this very general classification.

Based upon a great many clinical observations on certain of his mental patients, Kretschmer concluded that their pre-psychotic personalities conformed to two distinct patterns, namely, schizoid and cycloid. The *schizoid* individual is lonely, seclusive, self-conscious, sensitive, uncomfortable in the presence of others, prefers his own thoughts and intellectual pursuits, and is given to phantasy and day-dreaming. The person with a *cycloid* temperament is friendly, agreeable, pleasant, over-active, joyful, constantly seeks outside contacts, prefers group work and group play, and is interested in the world of today. It should be mentioned, however, that other cycloids may be retarded, serious, gloomy and sorrowful.

Kretschmer also investigated the personality characteristics of normal individuals, discovering in them many schizoid and cycloid traits. He classified normals, therefore, into scizothymes and cyclothymes, depending upon which set of traits was predominant. Kretschmer erroneously felt that all persons would fall into one of these two biotypes or into a sub-type of these. His conclusions were based on clinical observations and constituted a valuable beginning in the scientific study of the personality.

Sheldon (5) has also identified what he considers the basic aspects and components of temperament or personality. He refers to them as viscerotonia, somatotonia, and cerebrotonia.

The *viscerotonic* tends to be physically relaxed, loves comfort and good food, is friendly, amiable, sociable, extraverted, likes people and sleeps well. The *somatotonic* is characterized by an aggressive energy, a lust for power, physical courage, indifference to pain and lack of regard for the feelings of others. The *cerebrotonic* is a sensitive intellectual. He is shy, dislikes society and is restrained and introverted. He also has poor sleep habits and easy fatigability. The viscerotonic corresponds with the cycloid personality for Kretschmer, and the cerebrotonic with the schizoid makeup. The somatotonic resembles the cycloid, but also shows features of the schizoid.

## Personality and Disease

Just as in the case of physique, definite correlations can also be made between different types of personality and disease. Thus, Kretschmer found that the schizophrenic patient, prior to the development of his psychosis, invariably possessed the schizoid personality. He also noted that the cycloid personality was present in the vast majority of patients with manic-depressive psychosis. These observations have stood the test of time.

In a study of a large number of his autopsied cases, separate from the one quoted above, Freeman (6) has made a valuable contribution to this problem. He assigned his cases to one or another of four psychological groups, namely, schizoid, cycloid, paranoid and epileptoid. He then went over his post-mortem findings, which yielded data of considerable importance. Tuberculosis, for instance, showed an overwhelming incidence in the schizoid group, while malignancy predominated in the paranoids. Circulatory diseases and chronic streptococcal infections were most frequent in the cycloid and paranoid groups, a few of them appearing among the schizoids and epileptoids. Intestinal catastrophes were fairly common in the schizoid group, and none at all were found in the cycloids, despite the fact that hernias were most often seen in the latter. No cases of diabetes were encountered in the epileptoid group, and malignancy was rare. On the other hand, persistent thymus and cerebral malformations preponderated in the epileptoids. Acute infections and deaths by violence showed no predilection for any group. This study applies strictly to mental cases, but psychotic individuals differ from normal people only in degree, and the same trends can be found in mentally healthy persons, if they are looked for.

### PHYSIQUE AND PERSONALITY

It has always been intuitively recognized, even by the laity, that there exists some general relationship between body build or human form and more or less specific mental patterns or personality. Painters and writers have generally depicted their heroes and heroines as physically attractive and conversely their villains or evil-minded persons are made ugly looking and unattractive. Poets are usually thought of as delicately built and slight, whereas tyrants and bullies are described in terms of crude and heavy bulk. Shakespeare's Cassius had a ''lean and hungry look'', Hamlet is pictured as light and wiry, and Falstaff as coarse-fleshed as he was coarse-minded.

Medicine has now arrived at a position where it can support this popular belief. Kretschmer demonstrated, for instance, that the pyknic body type showed a clear biological affinity with the cycloid temperament, and that the asthenic physique was most often found in individuals with a schizoid personality. The rare occurrence of pyknics among the schizoids and the small percentage of asthenics, athletics and dysplastics in the cycloids form the reverse of this picture.

Sheldon has also correlated morphology and temperament. He links his endomorphic physique with the viscerotonic personality, the mesomorphic build with the somatotonic temperament, and the ectomorphic physical makeup with the cerebrotonic disposition.

### SIGNIFICANCE TO MEDICINE

Further studies and investigations are needed along these lines, but it is easy to see that this whole problem may be of great significance and value to medicine. A knowledge of the various physical and personality types, for instance, makes it possible to predict in advance the psychosis an individual is likely to develop before the actual onset of his mental symptoms. This is an important concept from the standpoint of preventive psychiatry.

The schizoids or cerebrotonics, for instance, with the bodily disposition of the asthenics or ectomorphs, are particularly prone to schizophrenia. On the other hand, the cycloids or viscerotonics, with the pyknic or endomorphic body builds, show a definite predilection for manic depressive psychosis. It must be remembered, of course, that while these two diseases of the mind tend to emerge from the types of constitution delineated above, it does not necessarily follow that such individuals are invariably predestined to become psychotics, or that these characteristics are necessary antecedents of the schizophrenic and manic depressive psychoses.

In this connection, it should be mentioned that physicians are also in a position to warn persons who are not yet sick just what organic diseases to watch for, and what conditions of ill health to consider the most dangerous, as far as they are concerned. It is possible to accomplish this by an examination of the outward appearance, and an evaluation of the personality of the individual, plus a knowledge of the diseases associated with his particular constitutional makeup. Under these circumstances, it is easy to institute preventive and prophylactic measures.

The diagnosis of obscure conditions is also especially aided by an insight into the physique and temperament of the patient. Thus, if the symptoms of some diseases are vague, indefinite and baffling, and if all of our instruments of precision have failed us, by classifying the person who is sick according to his body build and personality, and by noting the pathological conditions to which he is susceptible, we may be able to throw some light on the case, and arrive at a correct diagnosis.

Our attention has been largely focused on the external causes of disease, and too little a role has been assigned to the vital intrinsic mechanisms involved. We have only begun to unearth the various indices, and to think about the intimate components of the human constitution. The impetus gained by the work that has been done so far should result in further observations that will corral all of the factors comprising the different types of individual make-up. When the physician is in possession of complete information concerning the human constitution, he will then be in a position to study the patient thoroughly as well as his disease.

### Summary

1. Several types of physique and personality have been described.
2. Correlations between body build and disease, personality and disease, and physique and personality have been pointed out.
3. The significance of the constitutional makeup of individuals to medicine has been briefly stated .

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## DELAWARE AND ITS HEALTH CENTER

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There is no such thing as absolute security or peace of mind for any American today. In this weary, recurrently war-torn and apprehensive world, efforts to understand and guide the development of human beings are of highest importance. In the struggle being waged between the red forces of evil and the forces for good spearheaded by America, there has been included the struggle for men's minds and thoughts. Straight, rational, clear, fact-oriented, "truthful" data seem to be our necessity despite the alarums and tocsins of war. The people of Delaware, as well as their fellow citizens in the Union of the States of North America, have "thought" in the past, but must presently, and for the future, "think" as they have never "thought" before!

It may be considered that the Governor Bacon Health Center represents in its own way a crystallization of the philosophy of America on a national, state, and county level of integration. Just as the family unit represents the hard core making up the greatest strength and wealth of any community, so does the Health Center represent the culture of Delaware in its smallest governmental unit to and through its significance on a national level. Here is reaffirmed, daily on a profound socially oriented base, the dignity of the individual in all phases of life from the small child needing a foster home, the adolescent working through his emotional difficulty, to the alcoholic patient seeking a way out of the monkey-trap he has fallen into. Here, too, the geriatric patient and the chronically ill bedridden, the patient with seizures, and the crippled child are subject to the heightened solicitude of the people of the state of Delaware. Here, too, they receive the tender care, benevolent ministrations, thoughtful consideration, and merciful acceptance of their needs, which only a healthy, far-sighted, and inherently well integrated community can provide.

For a state as small in land size and as limited in population as Delaware, there has been demonstrated a distinct genius in leadership in the remobilization of medical and biological science directed toward the measurement, elucidation and appreciation of the value of the individual. A steady, firm, and concerted effort has been pushed towards its successful consummation in the rehabilitation of the human being whether that be on a physical or/and an emotional level. This is consistent with the true spirit of democracy.

In the present troubled state of the world in which we see now the development of a growing series of armed camps, it is refreshing and heartening to realize that there is a center wherein the engineering of human needs, resources, and potentialities is given the priority it so desperately needs. Preventive mental hygiene and preventive psychiatry have here in Delaware established a forum, have developed a point of view influencing an increasing number of people of differing pursuits and professions who at least have the one common goal of promoting the conditions for a more satisfying human life. Such a center of true American culture needs to be fostered and maintained throughout the dreary and troubled days to come. Delaware must and will again be the first to provide and to maintain a center for the development of the possibly "old-fashioned American character," wherein self-reliance, mental toughness, fortitude, capacity for personal responsibility, and emotional stability may be pioneered, nurtured and disseminated. Here will be the center wherein the real defenses of our democracy will be motivated and promulgated through the work with the patients given to our care. Here the value of the individual to the community will be realized, as well as the value of the community to the individual emphasized.

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On a national, state, county, and community level the helping hand and guiding spirit of the Delaware Health and Welfare Center has made itself felt in many ways. Visitors from other states come to observe and to learn; communities elsewhere in the United States write for help and advice; children and adults come for a while from their homes in the various communities in Delaware, and they return benefited in degree and more able to carry out their responsibilities as adequate and proper citizens.

Elsewhere in the world we see the destructive effect of the outstripping of our social sciences by modern technicological advances. In Delaware, and by its example, elsewhere throughout the nation, is noted the splendid result of the opportunity given for the approximation of the technical skills and social sciences in a carefully controlled environment dedicated to the dignity and worth of the individual. As long as Delaware keeps the dedicated flame of true humanity burning brightly, just so long will the nation's sufferers have hope that they, too, may eventually receive proper help at the hands of their truly benevolent, self-denying county, state, and national communities.

By the example of showing, not telling, what can be, and is being done for all its citizens in need of help and guidance; by the factual demonstration of the principles of preventive mental hygiene; by the clarification of the mutually interrelated responsibilities of the citizen and the community in the conservation and development of human resources from the child just out of the cradle to the aged anticipating the grave — by all of these does the Governor Bacon Health Center exhibit for all who will see and accept guidance, the true value of consecrated leadership concerned with the principle that the strong must protect and aid in the development of both the strong and the weak. This principle exerts and reaffirms its value from the county of New Castle in the state of Delaware to the entire group of forty-eight states.

## CLINICAL EVALUATIONS OF PSYCHOPATHIC PERSONALITIES

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The clinical management of psychopathic personalities still constitutes a most difficult dilemma. It lies in the nature of the characteriological peculiarities of these personalities that the psychiatrist is frequently confronted with social problems which transcend the realm of a purely individual therapeutic situation. While this fact accounts for some of the difficulties, there are other reasons which interfere with the development of useful clinical criteria. Conceptual controversies, for example, contribute to diagnostic confusion which, in turn, makes it nearly impossible to correlate diagnostic data or therapeutic results, as reported from different sources. It has become evident that neither clinical typologies nor selective definitions in terms of either biological, sociological or psychodynamic entities can cope with the multiplicity of characteriological aspects of psychopathic personalities. They differ from other people in their manner of human existence: (1) in the manner in which they experience themselves and their station in life, (2) in the manner in which they impress people through their social behavior, however, they do not show the personality characteristics generally established for neurotic and prepsychotic individuals.

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The futility of assessing the individuality of a psychopath on the basis of general elements of behavior, for instance, lying, irresponsibility, etc., makes it imperative to recognize the underlying fundamental disturbances, i. e., personality dysfunctions.

Clinical observations indicate that the basic modes of dysfunctioning occur in the sphere of affectivity, conation and empathy. These modes of dysfunctioning do not exclude each other but co-exist in variable combinations. The individual psychopathic patient may show manifestations of light, moderate or severe disturbances and may, according to the dominance of one or the other dysfunction, resemble a ''typical'' clinical profile. If we attempt an individual analysis of dysfunctions in psychopathic personalities, we cannot only dispense with meaningless generalities concerning ''psychopathic behavior'' but we can prevent unhealthy prognostic and therapeutic attitudes which have attached themselves to that fictitious entity ''the psychopath.'' Obviously, and this cannot be emphasized strongly enough, predominance and severity of dysfunctions differ from case to case and offer dissimilar therapeutic prospects.

An assessment of the functional state of these personalities distracts from preoccupation with etiological issues which may be of little immediate value with respect to therapy. Awareness of the clinical implications of the dynamics of compensation and decompensation, i. e. of function versus dysfunction, should form the basis for therapeutic management. The following analogy can illustrate the significance of the functional viewpoint. Decompensation due to congestive heart failure can be caused by a great many factors, some structural, some functional, some congenital, others acquired. The primary therapeutic concern is restoration of a state of adequate functioning. The internist cannot be discouraged by his inability to alter the underlying defect as in the case of valvular dysfunctioning. His therapeutic ambition, moreover, cannot be impaired by the knowledge of the possibilities of relapses. His therapeutic efforts must cover two phases: (1) restoration of a good functional state, (2) teaching the patient how to adopt his activities to his limited capacity potential. If both aims can be achieved, we can say that the cardiac patient has been treated successfully.

Similarly, the therapeutic management of psychopathic patients must cover two distinct phases: (1) the symptomatology of the moment, usually a situation of acute decompensation, necessitating clinical consultation or hospitalization, (2) planning of a style of living which will permit the best possible adjustment commensurate with the individual's adoptive capacities. Before we discuss the clinical implications of the main dysfunctions, we must stress the fact that they constitute instrumental forces in the same person and are often so coordinated that they influence behavior in a manner which cannot be discussed separately. Nevertheless, recognition of variable components of dysfunctioning is in a prerequisite for individual therapy.

## Dysfunctions in Affectivity

These are characteristically manifested in the life pattern of most psychopathic personalities. For reasons of simplicity we refer to the various patterns as modes of dysaffectivity. The far-reaching inner repercussions of dysaffectivity determine changes in all spheres, among them the intellectual, the social, and the sexual. Affectivity influences the basic attitudes of the individual because it imparts a specific coloring to his manner of experiencing. Consistency in attitude toward people, issues, and self-evaluation depends to some extent on the inner experience of affective continuity. The lack of it, the experience of unaccountable and repetitious mood changes undermines self-confidence because rationalizations which on previous occasions related the mood episodes to various situational factors, lose their plausibility. Affectively hyperkinetic personalities often impress other people as being immature, superficial, or irresponsible. Their uneconomical vivacity does not facilitate solidity in human relations, in work or cultural orientation. By contrast, affectively hypokinetic personalities may seem sullen, morose, gloomy, or dull. They often experience unpopularity to which they react with resignation, feelings of inadequacy, or hostile cynicism depending on their intellectual faculties and other personality factors.

Gloominess often promotes habitual uncertainty, vague anxieties and never ending chains of conflicts.

Such conflicts should not be regarded as causes of the emotional reaction but should be seen as indicative of the affective state of functioning. A factual appraisal of such a patient's affective functions can save hours of obsessive efforts to uncover reasons or motives assumed to be the cause of anxieties and mood crises. The same holds true with many cases of drug craving and alcoholism so often associated with modes of dysaffectivity. Craving for Benzedrine, alcohol and sedatives often manifest the need and desire for an alterative effect on intolerable mood situations. Chronic anhedonic moods and sleep disturbances are easily mistaken for signs of neurotic conflicts when they actually represent primary disturbances rather than concomitants of neuroses.

### Dysfunctions in Conation

The meaning of conation will here be confined to individual capacities for social striving, for perseverance and concentrated endeavor. Psychopathic personalities show evidence of specific dysfunctions which manifest themselves as inabilities to sustain efforts, to endure routine or work with maintained interest. We consequently find feelings of unrest, boredom and frustration and a repetitious desire for a change of scenery, new faces and new jobs. Psychological investigations (Dr. Jastak) have contributed to the recognition of these dysfunctions. Motivities scores which test volition, drive and perseverance are mostly lowered in psychopathic personalities while scores pertaining to the various areas of intelligence, reality judgment and other personality functions may be normal or superior. These dysfunctions can be discovered as early as childhood and are not infrequently associated with symptoms of dyskinesia, with enuresis, and persistent nail biting. These children fail to adjust themselves scholastically and socially in spite of good potentialities in other directions. Emotional disturbances follow as reactions to their inability to adhere to routine and discipline at home and in school. The social careers of personalities with predominance of conative dysfunctioning show considerable drifting and vocational instability. What such persons experience as getting bored, fed up or growing restless is primarily an indication of the manner in which they adopt themselves to their inherent lack of perseverence.

### Dysfunctions in Empathy

Empathy means capacity for "feeling into," in the sense of projecting one's own consciousness into another being. This implies an ability for warm, emotional participation. It forms the basis for love and friendship, for the promotion of individual efforts in the interest of the social group. With low empathic capacity there is a correspondingly low capacity for conflict. An interpretation of selfish or anti-social attitudes should be related to functions or dysfunctions in the sphere of empathy. We can avoid judgmental criteria, such as "moral deficiency" which seem to postulate "ethos" as some sort of personality trait. Definitions of moral behavior are contingent upon the codes of a given society and do hardly apply to the biological laws of personality functioning. It appears more appropriate to examine specific functions which enable or prevent an individual from adapting himself to socialized behavior. Empathy is a determining function of social adaptiveness.

The well known characteristics of cold egoism, emotional callousness and aggressive violence of the rights of others, found to greater or lesser extent in many psychopathic personalities, arise in relation to lack of emphatic endowment. In contrast to the other dysfunctions which are more harmful to the psychopath than to the group, dysfunctions in empathy always involve the family or community. While lack of empathic capacity must not necessarily produce disturbing behavior, it forms the soil for criminal attitudes. The psychopathic criminal, in contrast to other varieties of criminals, is in many aspects unsocial rather than anti-social. He has, to begin with, not the same potentiality for being "good" or "bad" because of his deficient empathic endowment. He therefore lacks appreciation of social values but he does not necessarily hate society or cultivate a rebellious philosophy. He is painfully egocentric rather than deliberately destructive.

### Therapeutic Evaluations

The psychopathic patient in a mental hospital arrives in a state of decompensation. He is in trouble — with himself or with the community. If the first is the case, he may seek help because he is aware of his difficulties. If he is brought to the hospital because of social entanglements, he may be hostile, defensive and opposed to therapy. An individual analysis will, first of all, disclose the nature and predominance of dysfunctions. If the affective disturbances are acute and have contributed to the decompensation through intense irritability, explosive mood crises, etc., the affective symptoms should be treated symptomatically. We are here not concerned with cases of phychoses but with intact individuals whose disharmonious personality make-up has brought about an emotional crisis. Drugs such as benzedrine or barbiturates should be used if they are helpful in restoring affective compensation. Electroshock therapy may be indicated in an unusual case. We think of a patient who showed marked dysaffectivity characterized by gloominess, explosive temper tantrums and habitual insomnia. He also had drifted considerably, had been delinquent in minor ways until he enlisted in the army. Army life agreed with him at first because he liked to travel and the freedom from civilian responsibilities. When he found it too difficult to subject himself to military discipline, he got in trouble and was dishonorably discharged. Prior to hospitalization, he had been unable to sleep at all. He began to drink, stay up all night and was finally arrested for disorderly conduct. While insomnia had been a familiar problem to him for the greater part of his life, it had now reached the point of extreme severity. His medical history was entirely negative. Close observation in the hospital confirmed the existence of a severe sleep disturbance which did not respond to ordinary measures and could only be controlled with considerable amounts of barbiturates. It was finally decided to give three E.C.T. at bedtime on successive days. This promptly produced a marked change in affectivity and restored an adequate sleeping cycle. The affective improvement thus initiated a state of relative compensation. We would not think of this patient as a psychopathic personality if his personality disorder would be of a purely affective nature. His life career, however, showed clearly the coexistence of affective and other dysfunctions —not seen in the so-called cycloid personality —which in their specific combination only distinguish the varieties of psychopathic personalities. While we agree with E. Bleuler who emphasized the importance of dysaffectivity, we cannot go as far as he did when he stated "the so-called psychopaths are really nearly all exclusively or mainly thymopaths" since other spheres of personality functioning are also fundamentally affective.

The reorientative treatment phase must be carefully planned and combine psycho-therapy with a daily program which develops and increases the adaptive capacity to the potential optimum level. Work therapy, under skilled supervision, is especially important where conative dysfunctions prevail. Adjustment to a daily occupational routine will be easier if certain incentives are offered. Our experience has shown that a gradual promotion of selective patients to the status of semi-employee with pay, privileges and responsibilities can transform a notorious drifter into a person useful in his community. Consultations with Centers for Vocational Rehabilitation are often essential for a final settlement of the patient's occupational problem when he is ready for a new start. There is nothing as specifically contra-indicated in the management of these patients as idleness on the ward. It should be understood, however, that work therapy is worthless without the all important reorientation through psycho-therapy.

We want to mention certain principles which we found of great value in psychotherapy. First, therapeutic sessions should not be casual or occasional but well planned and organized. There are roughly three phases to be considered.

a) individual sessions in which the patient's life situation and personality can be studied and a good contact be established

b) group sessions which become classes in social and human relations

c) maintenance treatment in day or night clinics for patients who have left the hospital and attempt to readjust their lives.

Many psychopathic patients have what may be called excellent insight. But insight into one's disharmonious personality structure may be of as much or little value as a knowledge of having a malformation or a chronic illness. The realization "it's just me" is a good starting point but not yet the key to a more satisfactory life. Others are less or not at all aware of the interdependency of their personality characteristics and life patterns. The therapist must keep in mind that he deals, as a rule, with individuals who are not "sick" but characteriologically different in a variety of ways. Their philosophy is as much adapted to their personality milieu as is that of the average person. But while this imposes limitations, it does not preclude responsiveness to education. Group sessions with these patients are especially helpful in producing a general knowledge of the subjectivity of one's viewpoints and the relativity of thoughts and attitudes which originated during states of crises. A patient can, we observed it again and again, see the peculiarities in another person which he cannot recognize in himself.

One of the main tasks of group sessions is, therefore, the demonstration of objective and subjective factors which shape and influence a person's concept of himself and the world. This happens quite naturally when, through imperceptible steering on the therapist's part, each patient expresses and defends his own views and, thereby, exposes himself to the criticisms of the others. It is preferable not to follow a rigid scheme but to leave the choice of themes to improvisation as long as a measure of continuity can be maintained. Even unsophisticated patients respond with greater interest and spontaneity if these sessions acquire a reputation of seminars on social problems and human relations instead of treatment situations which remind them of their hospital status. Moreover, it actually is psychagogy rather than therapy which creates the patient's inner reorientation.

The evaluation of patients must be realistic with regard to the therapeutic potentialities. Severe dysfunctions in the sphere of empathy always offer an unfavorable prognosis and leave very little hope for more adequate social careers. It seems justified to think of these patients as malignant cases of psychopathy. Indifference or a benefit-of-a-doubt attitude on the physician's part may have great consequences for society if these patients are left to themselves. An individual assessment of the patient's therapeutic potentiality must be realistic not only in the interest of society, but in fairness to the patient who should be protected from situations with which he cannot cope.

In summary, clinical evaluations of psychopathic personalities, be they diagnostic, prognostic, or therapeutic, depend on the recognition of main components of personality dysfunctioning. The varieties in which they manifest themselves in the individual psychopathic personality preclude all generalizing theories and methods and necessitate an individuating approach.

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## A MENTAL HYGIENE CLINIC GOES TO THE SCHOOLS

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The cry for more and more, for more and better, mental hygiene clinics has shown an increasing crescendo since Beers first introduced the concept of prevention psychotherapy in 1908. And while the accent has been on prevention, much of this has been lip service only and some of this, tho distinctly sincere, has been tainted with the same kind of stigma to which the mental hospital has been subjected and as the tuberculosis hospital had at the turn of the century. As a result of these important circumstances only those children who were obviously disturbed — usually the "behavior problems" came to the attention of the clinics. Those more seriously disturbed children who were in the process of surrendering life's battles, and of withdrawing into a fantastic world of their own making, but who created no classroom or general behavior problems were allowed to continue their retreat into neurotic, schizoid or schizophrenic disorders. This was also true for those individuals who managed to hide their disorganization behind a more or less satisfactory academic record, purchased at an enormous price.

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The Delaware Mental Hygiene Clinic developed and recently expanded a program for sending psychiatric teams into the school systems and indeed, into the schools themselves to find and treat the emotionally disturbed and disorganized child.

Teams generally consist of a psychiatrist, psychologist and social worker. They examine, make recommendations for and treat those children who show any indication of needing help. At the same time assistance was given parents and teachers of those children. There is a definite team attempt to manipulate the immediate environment of the child both in the situation on where he spends most of his waking hours, the school, as well as the more personal environment in the home. While in some of these cases we ran into opposition from parents, the fact that the situation was handled entirely within the framework of the school, tended to minimize this factor. The flexibility of this system makes it easy to return the child to his normal habitat in the classroom, and to his teachers with a minimal loss of time and effort and with much reduced anxiety. In any event the "awareness" of the problem this stimulated has in some cases been useful. In some it may have done harm. This carrying of the clinic into the schools has had some very definite and interesting results. In those larger systems where even the current technique has failed to produce direct contact between the teacher and the psychiatric team, cognizance of the availability of the service *on home grounds* still played an important part in bringing child and clinic together. In the smaller school unit coordinate functioning between teacher and psychiatric team has brought help to the door of the classroom and indeed into the classroom in the form of a kind of teacher training program. It is this sense of "awareness" which has helped the teacher recognize that the child with no "minus qualities" in his personality was no more necessarily a well-adjusted child than a stuporous schizophrenic who caused no overt disturbance, and indeed if there was not a reasonable share of "plus" qualities he or she might be a much sicker youngster than the classroom "problem child." It is that kind of child, the child who usually is not in any serious difficulties, and who may even make fair grades who eventually withdraws and develops serious mental illness and who eventually makes up the bulk of our mental hospital residents, as well as the bulk of the unhappy neurotics who have presented such a fearful problem in recent years, in our culture.

The recognition of these maladjusted children relatively early has made them more available to "preventive psychiatry" in that therapy prevents further development of the disorganization, and produces a reorganization of the personality. Obviously, the sooner the need for therapy is discovered, the less apt we are to find malignant disturbance developing.

This part of the Mental Hygiene Clinics program has so far reached a small number of children, but the results have been satisfying and will warrant further expansion of the program when school opens again. Indeed, a number of these cases are being carried throughout the summer. It is our feeling that this is a real forward step in "preventive psychiatry."

A few typical cases which were, or could have been, treated through the school mental hygiene clinic arrangement will illustrate the kinds of problems which might otherwise have been missed. The selection of cases is not particularly utilized to show results, but rather types of cases.

Case 1 (B. W.) This case was referred to us by a school psychologist in the Wilmington Department of Child Development and Guidance because he was suddenly falling down on his school work, because he had suddenly started to truant from school, or come to school very late, or would become ill on the way to school. Strangely, when this boy truanted he went directly home and sat alone in the house.

The history revealed that his parents had separated 2 or 3 years prior to his referral, with his mother remaining in the home and his punitive and occasionally alcoholic father leaving. Just prior to the onset of the behavior problem, his mother, who had been critically ill, died. His sister, who was employed, took over the management of the home. She sent Billy off to school each morning and then left for work.

This case might easily have been handled as that of a negativistic behavior problem and had it fallen into the hands of a less alert individual might have been treated by punitive or coercive measures. Fortunately he was referred to the Mental Hygiene's school clinic where his insecurity was recognized and treated.

What might have happened had treatment been otherwise leads to unpleasant speculations.

Case 2 (W. Z.) illustrates the problem of the quiet, withdrawn child who shows no overt behavior problems aside from his definite fantastic withdrawal and who might have been considered very dull, not withstanding psychologic tests showing him to be of average capacity but poorly motivated.

This 9-year-old child was retarded 2 years in his grade placement and had been promoted only with the charity of his teachers. The chief complaint against him was that he sat and stared into space for long periods of time and appeared uninterested in people around him at school.

His history revealed that he had spent his earliest developmental years in an orphanage. He had been rejected by his unstable mother and only after his father remarried did he come to live in a more acceptable home.

His own stories regarding himself are indeed fantastic. Most of them indicated his need to be accepted and to accept himself, yet he failed to recognize them as fantasies and told them as if they were factual.

Therapy with him is still in progress and is showing progress. But it is slow. Again, his behavior at home might not have revealed the need for therapy. It is only the ability of the school authorities to recognize his needs that brought him to therapy. He needs it badly.

Case 3 (C. K.) illustrates a common enough problem which was not referred and who later referred himself. A 17-year-old high school student, he came directly to the Mental Hygiene Clinic for help at the beginning of the school year. He has a higher than average scholastic record but he comes to clinic with great anxiety because he fears he will not be able to maintain it. He is essentially an insecure individual, who has been able to cover up his anxiety by his excellent record. However, he throws all of his resources into his school work and has no time for social or other activities. If his "grades" fail — he has nothing. Therapy with him reveals deep emotional problems which he has not yet solved. An opportunity to recognize this in the 6th grade was missed by a teacher, who herself, was able to supply him with the love and recognition which he needed, but, who also taught him the technique of "purchasing" that recognition with his grades. The threat of losing this "purchase price" brought him to therapy.

Truly this case would have been most difficult to detect, but had it been detected it would have made a happier personality of him.

## Summary

1. A group of three cases is presented to show different methods of withdrawal.
2. The growing awareness of the needs for psychiatric assistance for withdrawn children is recognized.
3. The advantages of therapy in a school system are pointed out.

## MENTAL FACTORS IN GENERAL MEDICINE AND SURGERY

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As I look back upon my own days of general practice in a military and hospital environment, I realize that there were many aspects of my practice that were very poorly understood. Only occasionally did I see a patient who was definitely psychotic, (and in recognizing them I was no more expert than the usual lay person). Perhaps somewhat over a third of my patients were sick solely because of physical disease while there was another third in whom I could find no definite body disease to account for their illness. These I complacently regarded as chronic functional cases for whom little or nothing could be done. Sometimes when irked and bored by the patient's repeated complaints, I would be relieved when some surgical consultant would suggest that the removal of the patient's ovaries, appendix or adhesions would doubtless cure the patient. Unfortunately, my relief was usually as short as that of the patient who soon returned with the same or some other disabling complaint. Occasionally, after noting that I had not seen the patient for a few weeks I would, with mingled pity and indignation, learn that she was being treated by a chiropractor or an osteopath or was becoming interested in Christian Science.

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Unfortunately, I failed to realize the important part that emotional and other mental factors play in the general practice of medicine. Such factors enter to some degree into any illness. At times they seriously complicate a physical illness and in many instances the physical complaints are but the disguised expression of unsolved emotional problems. Medicine no longer looks upon the human organism as merely a collection of coordinating organs but as a person in whom the physical, mental and emotional are but aspects of one individual, reactive whole; it believes that whatever evokes a response or adjustment in any one of these aspects evokes response and adjustment in the others also. One cannot split the individual into a mental part and a physical part — he deals with a biological entity. Too often the physician has regarded the patient as the uninteresting vehicle of a fascinating disease process. As a result he has frequently studied the disease and neglected the patient. The interpenetration and interdependence of body and mind are so intimate and subtle that there seems to be no physical condition which may not be attended by emotional concomitants and no emotional state that may not evoke physical symptoms, real or apparent. How much of the problem of the patient's illness is emotional, how much is physical or structural and what is the relation between the two is a challenging and often a difficult question for the physician to answer.

The medical section of the 1938 meeting of the American Association for the Advancement of Science was devoted to the subject of mental health. At this meeting I was interested in hearing the following expressed by an internist, Dr. Louis Hamman, Associate Professor of Medicine at Johns Hopkins: "To the specialist," he said, "psychiatry is another specialty operating in a contiguous but separate domain. To the internist it is a vital and integral part of his work. Indeed, I find it impossible to formulate a clear expression of the relation of psychiatry to medicine, so intimately and inextricably are they bound together. The physician studies and practices psychiatry continuously, even when he protests that he has not the least knowledge of formal psychiatry. It is the chief instrument of his success, even though he may practice it unconsciously.

"Strictly speaking, it might be stretching a point to say that all of these functional disturbances were due primarily to psychiatric disorders. Nevertheless, if you are willing to define the province of psychiatry as the broad fields I have outlined, then surely the problems of these patients are of interest and concern to psychiatrists. For instance, a man otherwise well and competent suffers from very distressing digestive symptoms whenever he is worried, or for other reasons under nervous strain. Shall we consider this a psychiatric problem? I think we undoubtedly must, since here psychic influences play the chief role in disturbing the balance of the vegetative nervous system."

Often the emotional sources from which the patient's symptoms arise are deeply seated and not easily ascertained. It will usually be found that the patient whose illness is mentally determined, expresses through his symptoms his inability to deal with some concrete life problem arising, perhaps, from his instinctive life, from a difficult relationship to parents, wife or children, from a feeling of insecurity or from disturbing residuals of past experience. At times they may be a substitute reaction for chronic disappointment, frustration or other tension-producing situations.

Until recently psychiatric attention has been given only to grossly disordered conduct — to persons locked up in "asylums" — but the field of psychiatry has become far more inclusive and has spread into the anxieties, the fatigues, the instabilities, the maladjustments, the disturbances of normal everyday living, and also includes the effect of mental and emotional functions upon the component organs of the body as well as the effect of disordered organs upon the function and behavior of the human being as a whole. This lag in recognizing the importance of emotional and other mental factors in the everyday practice of medicine and surgery has been largely due to the fact that the training of the medical student has tended to lead him to regard as biological only those data which have been furnished by the microscope, by chemistory or physiology, data which can be measured or visually demonstrated. For that reason the physician has been led to concentrate upon organic symptoms to the exclusion of the person having the organic disease, to study the disease and neglect the patient. He should remember that emotional experiences are also concrete biological facts worthy of the same consideration as organic functions and dysfunctions.

Gradually, it became realized that the individual is a unitary biological organism, that the organism is a unity and not merely an assemblage of its parts, that body and mind are inextricably fused into a personal unity; or expressed differently, mind and body are not entities which interact but actually two aspects of a fundamental unity. The recognition of this fact has led to a new approach in the study of the causes of many disease manifestations. The fact that acute emotions have an influence on body functions belongs to the most common everyday experience. To every emotional situation there corresponds a specific syndrome of physical changes, body-mind or psychosomatic responses, such as laughter, weeping, blushing, changes in the heart rate, respiration, etc. Because, however, these psychomotor processes belong to our normal life and have no ill effects, medicine, until recently paid little attention to their finer investigation. These changes in the body as reactions to acute emotions are of a passing nature. After the emotion disappears the corresponding physiological processes, weeping or laughing, or heart palpitation, or elevation of blood pressure, also disappear and the body again returns to its equilibrium.

The study of neurotic patients has shown, however, that under the influence of permanent emotional disturbances, chronic disturbances of the body may develop. At first such bodily changes under the influence of emotion were observed in hysterical patients. Whenever emotion cannot be expressed and relieved through normal channels, through voluntary activity, these channels may become the source of chronic mental or physical disorders. Whenever emotions on account of mental conflict become repressed, that is to say, become excluded from consciousness and thus from normal expression, they sustain a chronic tension which is the cause of the hysterical symptoms of the body. The bodily symptoms produced in this way were first observed in the muscles controlled by the will and in the field of sense perceptions. Later, emotionally conditioned disturbances of the internal vegetative organs which are not controlled by conscious voluntary impulses, such as the stomach or the heart, were observed.

Such observations came not from psychiatrists but from specialists in the field of internal diseases. Here are included the disturbances of the internal vegetative organs caused by nerve impulses, the ultimate origin of which are emotional processes most probably localized in the cortical and subcortical centers of the brain. At first the neurotic or functional disturbances of the stomach, the bowels and the cardio-vascular system became well known under the name of gastric, intestinal or cardiac neuroses. In such so-called functional disturbances the anatomical structure of the organ is not changed, only the coordination and the intensity of the organ functions are disturbed. Such disturbances are considered as less serious because they are reversible, in contrast to those diseases in which the tissues show definite pathological alterations often constructing irreversible damages. Since these functional disturbances are caused by emotional factors, psychotherapy has gained a legitimate entrance into medicine proper and should not be restricted any longer to the field of psychiatry. Since these emotional factors, these emotional conflicts, arise during the life of the patient in his relationship with other human beings the patient as a personality becomes an object of therapy.

To return to the so-called functional disturbances arising from factors in the emotional life of the patient, more and more have clinicians suspected that functional disorders of long duration may gradually lead to serious organic disorders based on visible anatomical changes. At present our knowledge as to what organic disorders may be so produced is limited. Some types of peptic ulcers and of essential hypertension probably belong in this group. Since the functions of the ductless glands are partially under psychic control, for example the adrenal gland is influenced by rage, it is quite possible that many endocrine disturbances will, in the last analysis, turn out to be the results of chronic emotional disturbances. This is clearly indicated in cases of toxic goitre, the beginning of which can often be traced back to disturbing emotional experiences.

Many chronic disturbances are therefore probably caused, not by external, mechanical, chemical factors or by micro-organisms but by the continuous functional stress arising during the everyday life of the organism in its struggle for existence. Continuous fears, aggressions, wishes, if repressed, result in permanent chronic emotional tensions which disturb the functions of the vegetative organs. Many emotions, due to the complications of our social life, cannot be freely expressed and relieved through voluntary activities but remain repressed and then are diverted into wrong channels. Instead of being expressed in voluntary innervations they influence the internal vegetative functions such as digestion, respiration or circulation.

The teaching that organic diseases must first be excluded and only then the possibility of a psychological disturbance be considered leads to many errors. Psychological observations and physical studies should go hand in hand. When a history of the patient's life situation and personality reactions is secured, a common psychological theme with its different variations will often be found to run through his life and explain the various symptoms and disabilities, a relief from which has not rarely been sought through operation.

Doubtless both the psychiatrist and the surgeon make errors in diagnosis as to the cause of abdominal pain and discomfort, the former believing that many cases of chronic suffering which have arisen from organic pathology are of psychological origin, while the surgeon is deceived by his organic training into thinking that he can cut out of the body a pain that had its origin in the emotional life.

The physician should constantly bear in mind the importance of treating the person who is sick and not merely the disease from which he suffers. Illness of a clearly established physical nature is often attended by important psychological concomitants which because of their importance both in prognosis and treatment should be recognized by the physician. The course and outcome of the organic process may be greatly influenced by the mental attitude of the patient. At times the damage suffered by the emotional life and mental health of the patient through somatic illness or disability may be more serious and permanent than are the physical results of the organic lesion. It is therefore not illness or disability in itself that is of psychiatric importance but what a particular ailment means to a particular individual.

The loss of a hand, for example, may have a very different meaning to a violinist than to a professor of history and a resulting disturbance or disorganization of the personality be therefore much more apt to result in the former. Lesions in parts of the body which psychologically represent organs of marked value for the personality — such as eyes, breasts, sexual organs — may be highly disturbing even though the disease, objectively viewed, is not serious. Disturbances of the personality rarely follow operations upon the appendix or other organs not invested with deep emotional value. On the contrary, psychiatric complications following operations upon highly valued ones, such as the reproductive organs, are not uncommon. Disabling physical handicaps such as crippling, blindness and deafness which put the patient at a disadvantage with his fellows may have profound effect upon mental health.

The sensitive, even paranoid reactions of the deaf, at times more disturbing to social adjustment than the deafness itself, are familiar observations. In girls, particularly, a serious physical handicap may produce mental problems that completely overshadow the defect. Because of the high evaluations placed upon their biological functions and because any conditions which adversely affect these functions may seriously jeopardize their personal, economic and social security and happiness, women are particularly subject to fears and emotional conflicts when such functions are disturbed. Lack of attractiveness, or physical defects which prevent marriage, an inability to bear children, the loss of physical charm through age or disease, the presence of conditions that make discontinuance of marital relations necessary or the approach of the involutional period may constitute problems to which emotional adjustment is difficult or impossible within the limits of mental health. Many fears and exaggerations of the importance of disease arise from feelings of guilt, particularly from a sense of guilt concerning early sex activities or indiscretions. A slight indisposition may be attributed to a regretted lapse and be magnified into a disabling or fatal illness and regarded as a just desert.

The attitude which the patient manifests toward his disability should be taken into consideration. Faced with physical disease the patient may readily accept or even suggest that his disability is of mental origin. He may neglect his symptoms or deceive himself as to their seriousness. On the other hand, the patient whose disability is of psychic origin seeks for a physical basis. Instances in which the patient consciously desires cure from a physical disability but unconsciously wishes that the symptoms may continue are not uncommon. The patient sincerely believes that he is anxious to be cured but unconsciously clings to his disability with a tenacity that may defeat the physician's therapeutic efforts. The motives that continue the disability may be various—e. g., self-punishment, self-importance, revenge or protest. For various psychological motives, too, certain patients may welcome or request surgical operations. With some patients, surgery may be an attention-gaining device, with others a means of punishing themselves for feelings of guilt or of escaping responsibility or irksome drudgery..

If psychic or emotional components accompany definite physical disease, a failure to treat them will often tend to prolong convalescence or encourage a reaction of chronic invalidism. If the physician concentrates his attention on symptoms without an adequate attempt to ascertain or remove their causes he may aggravate or permanently fix them.

The physician should remember that in the general hospital conditions and situations may constantly arise tending to produce tension, strain or apprehension and thereby promote unhealthy mental reactions or physical complaints, perhaps with visceral disturbance. Among them may be protracted convalescence, awareness of incurable or crippling disease, fear of death, conflicting medical statements or advice, the misinformation and misguided advice of other patients and other facts. Every specialty is accompanied by procedures or situations heavily weighed with elements potentially disturbing to emotional life or personality. In opthalmology, for example, the bandaging of both eyes with a prolonged convalescence in a darkened room may precipitate a panic reaction of a delirioid nature. In gynecology there may be problems connected with contraceptive practices or illegitimate pregnancy, or the occurrence of cystoscopy addiction. In urology psychiatric problems connected with impotence, frigidity, dyspareunia or premature ejaculations are common. It would be a happy combination if as much effort were expended in the psychological treatment of pre-operative fear and apprehension as there is on the search for a drug to alleviate them. In surgery, too, a fear of mutilation or disfigurement or of loss of vital structure or capacity may threaten the patient's sense of security. While frequently this results merely in an apprehensive preoccupation yet it may lead to anxiety, depression, mild panic states or to exaggerated expressions of previous personality tendencies. In many other medical situations too, the associated psychiatric problems may be more disturbing than the physical symptoms.

Convalescence from a serious physical illness not rarely constitutes a psychiatric problem. The patient may be reluctant to give up the luxuries of the sick room and may be resentful as the warmth of feeling and interest previously manifested by his family seems to lessen. More frequently the family may insist on continuing protective and the patient on being babied with the result that regressive personality characteristics persist. The longer the patient defers his return to his responsibilities, the harder it is to come back and the more firmly fixed any unwholesome personality reactions that have been established.

The physician should remember that the individual's reaction to psychological stress and strain, to deeply seated dissatisfactions, may be expressed in the language either of the mind or of the body. If expressed in terms of the former, one meets with more or less obvious mental disorder for which the patient is referred to the psychiatrist. If, however, the reaction is expressed in terms of the body he comes to the attention of the general practitioner, the internist, the surgeon or the gynecologist. The patient will not, however, permanently recover so long as these dissatisfactions and unsolved problems continue to exist.

In order to apply successful therapy, it is truly a necessary requisite that the physician give all that he has, and give all that he is to the patient. Of his mental attributes such as sense of fairness, justice, truth, honor, fellowship and righteousness. They must be given without stint and in ever-increasing volume. In fact, his personality is being put to the test, and if of sterling quality, it will contain those elements that will give the patient hope, faith and understanding. By personality the psychiatrist does not mean a supposed urbane charm, distinction and power which the lay person believes may be achieved by some vague type of cultural regimen, but rather, that organization of constitutional, affective, ideational and conative capacities and tendencies which characterize the individual and largely determine his habitual patterns of behavior. The physician must have a genuine and inherent interest in his fellow man as well as in human disease, the proper attitude toward the behavior of sick people as well as an understanding of the disease itself. Some physicians are not endowed with a personality that will permit them to understand or sympathize with suffering of emotional origin.

The understanding physician must have great tolerance for human weaknesses. He must be a person to whom the patient feels that he can reveal himself. He must have an open mind for all the possibilities of the effect of an idea, and its charge of emotion, upon the body as a whole or any of its parts. He must be flexible in personality and he must be willing to believe that the safe ground of accepted knowledge, often called commonsense, is sometimes made up of prejudices. Goethe said, ''To the man of thought almost nothing is really ridiculous.'' Just because the physician does not faint at the sight of a surgical operation, he should not assume that others might not do so, nor should he be intolerant of those who are so affected. Just because the physician has never known the pain and resentment of having spent his childhood and adolescent years with hostile parents does not mean that he should not try to understand their effect as they appear in some one else. However, the display of personality traits, in whatever quantity, without quality, will bring unsuccessful results. The quality depends upon the knowledge, experience and the basic personality traits of the physician. His honor and integrity are the priceless ingredients of his value to the patient. This truism has been known for thousands of years. From the Arabic we have inherited its significance from this old tale entitled ''The Priceless Ingredient.''

'In the city of Bagdad lived Hakeem, The Wise One, and many people went to him for counsel, which he gave freely to all, asking nothing in return. There came to him a young man, who had spent much but had got little, and said, ''Tell me, Wise One, what shall I do to receive the most for which I spend?'' Hakeem answered, ''A thing that is bought or sold has no value unless it contains that which cannot be bought or sold. Look for the priceless ingredient.'' ''But what is this priceless ingredient?'' asked the young man. Spoke then The Wise One, ''My son, the priceless ingredient of every product in the market place is the Honor and Integrity of him who makes it." '

To paraphrase the words of Hakeem, the therapy that is merely bought or sold has no value unless it contains that which cannot be bought or sold. Look for the priceless ingredient, look for the honor and integrity of him who practices psychosomatic therapeutics.

Finally, although Socrates was not medically trained even in the crude practice of his day, yet his injunction should not be forgotten:

> "Just as you ought not to attempt to cure eyes without head, or head without body, so you should not treat body without soul."

## EMOTIONAL CATHARSIS, A PSYCHOTHERAPEUTIC METHOD FOR THE GENERAL PRACTITIONER

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Today it is assumed that the general practitioner recognizes the importance of the psychological factors involved in creating physiological disorders in the human body; however, my colleagues in general practice often make a statement similar to the following: "I can recognize the psychological disturbances brought about by anxiety, but what can I do to help my patients in the short time I have available for them in my practice?" In this connection, one might quote J. R. Rees, M. D.**:

> The doctor in a mood of mild frustration said to a colleague with whom he was having a personal analysis: "I can't cure these patients." He was met by the response: "Of course you can't. The more you demand that you shall cure people — in fact, be a healer — the more you find a state of therapeutic impotence in yourself. All you can do is something a little more than they can do by themselves."

The purpose of this paper then is to familiarize the general practitioner with certain principals which he might utilize in his treatment of psychiatric problems in the office. A method that should not be minimized and one that the practitioner should be able to handle is catharsis — allowing the patient to speak freely to a non-condemning listener. This alone may accomplish many things. It gives the patient a chance to unburden himself and to have a confidant with whom to share his problems. Thus, through ventilation, a great part of the anxiety may be drained off and may lead to some degree of relaxation. This can be likened to the common expression of relief after "getting it off your chest." Physicians are looked upon as a group of people who are usually dependable and who are able to keep a confidence. For this reason a patient may be able to speak to a doctor when he could not speak to anyone else.

Next, a patient who has a maze of thoughts of which he is fearful, in verbalizing will tend to become more specific. As the problem becomes more specific, it also becomes less frightening and the patient may be better able to derive from the interview a so-called corrective emotional experience in that, in spite of his shortcomings, he is neither being rejected or punished and feels like an accepted individual in society once again.

Once the context of the conflictual material evolves or presents itself through catharsis the physician should then have adequate information at his disposal to be able to help his patient. If the problem is superficial and the individual is fairly well integrated, ventilation may be what is needed; however, the limits of this method must be kept in mind as we are only dealing with thoughts and feelings on a conscious level. Unfortunately, a large percentage of the conflictual ideation is in the unconscious and is totally absent for the patient's verbalization.

Finally, it must be added that there are certain things within himself of which the physician must be aware at all times. This includes a reasonable amount of maturity. He should be able to avoid displaying any feelings of anger, admonition, fear, etc., which he might feel toward the patient or toward any of the conflicts which may be evolved. Another value is the possession of some warm feelings toward the patient. Since psychiatry is an interpersonal relationship, it would be detrimental to the patient if he felt he was not wanted or if he became aware of any hostility toward him. For example, if a patient came into the office because of certain impulses that carried with them some guilt feelings, these emotional tones would probably be enhanced by any action of the physician which could be interpreted as animosity, disgust, etc.

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**Rees, J. R., M. D.: Modern Practice in Psychological Medicine.

The practitioner should have some understanding of both neurotic and non-neurotic behavior in order to help his patient. This author recommends Dr. Levine's book* as a valuable source of information for obtaining help in reaching this understanding.

And, finally, the practitioner should always be dependable. While this should be assumed for all patients, it is more essential for the neurotic individual. The physician must be accepting at all times no matter what the patient's impulses may be or no matter what behavior the patient may display. Being dependable here does not mean acceptance of asocial or amoral acts but acceptance of the individual as a whole.

As an illustration of the above-mentioned procedure, the author would like to cite a case of a patient who was seen in the Observation Clinic at the Delaware State Hospital. This was a 37-year-old, married female who presented herself with a chief complaint of crying very easily, agitation, being depressed and at times had thought about suicide, with one unsuccessful attempt. Because of the affective state, namely, depression, she was referred to the hospital. On admission she appeared rather apprehensive, defensive, and her depression was delineated psychologically by ''feeling low in spirits,'' crying spells and a somewhat depressed mood. However, the intensity of the depression was not indicative of a psychotic process. It was rather superficial and was not accompanied by any delusions that one sees in the affective psychosis. Somatically, her depression was manifested by her inability to eat, insomnia, loss of weight and loss of any desire for coitus, which had previously always been enjoyable. She stated that she felt her big problem was the fact that she could not live with her husband in an harmonious relationship after 18 years of marriage. She maximized any of the trifling misdemeanors that her husband had done in the past, and stated that she felt that she could not get along with him, that he was very jealous and would not allow her to go out. She is the mother of three children, all of whom are living and well. The husband may be described as a hard-working, easy-going, cooperative individual who speaks in a matter-of-fact manner and is able to recognize some of the difficulties that his wife is having.

To continue, this patient was seen on the average of twice a week and given a chance to ventilate some of her feeling. After six one-hour interviews, the patient was symptom-free and the context of the therapeutic sessions consisted of her being able to express feeling concerning an extra-marital relationship. It became quite evident to her that there was a tremendous amount of guilt feeling surrounding this episode and that she was exaggerating her husband's shortcomings to justify herself in this extra-marital relationship. During the total number of sessions, the therapist took a non-condemning attitude, the patient having sensed from the interviewer that, although she could be accepted as an individual, in a mature, adult relationship, extra-marital affairs are not conducive to maintaining a healthy relationship. The patient was discharged and in subsequent follow-up interviews remained symptom-free and continued on to have a happy marriage.

It is important to point out here that in many cases that are seen on a short-term basis at the Observation Clinic, they are handled in just this manner. The patient as described above was given a chance to relate her difficulties and an opportunity at ''verbalization''; or to ventilate to an authoritative figure, dissipating the guilt feeling. Also a process of reeducation and reorientation was given for a better and more constructive life. As one can easily see, the process that was utilized here was that of catharsis—reassurance with a non-critical, non-condemning attitude.

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*Levine, Morris, M. D.: Psychotherapy and General Practice.

# CHILD GUIDANCE AT GOVERNOR BACON HEALTH CENTER: THE SEIZURE CONTROL UNIT

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The Seizure Control Unit of the Governor Bacon Health Center was recently opened for the study and care of patients suffering from those multitudinous conditions, usually accompanied by some alteration of consciousness and often accompanied by some form of seizure, that have sometimes previously been subsumed under the term "epilepsy."

The Health Center is the only childrens' resident treatment center we have been able to find which accepts for treatment in a resident setting children having convulsive disorders as well as those having the variety of primary behavior disorders and other psychiatric problems that are met with in such a psychiatric institute. There are advantages in treating children so afflicted with seizures along with others having neuropsychiatric disorders, not the least of which is the opportunity to compare one with the other and to evaluate a variety of fundamental personality problems, and methods of dealing with them.

Children in our seizure unit have shown a wide variety in degree and intensity of the personality problems that they show. At one extreme are highly intelligent, well adjusted children with good insight into their situation, and able to cooperate with the program of the hospital in a responsible way. At the other extreme are the insecure, antisocial individuals, sometimes underdeveloped intellectually, who require custodial care for the protection of the community in which they live. Yet, in spite of the variation and degree, common problems are faced by all of them, and common patterns of reaction become evident. In children, because of their more limited experiences and less firmly fixed habits of thinking and acting, their behavior difficulties have a simpler and more understandable basis than in adults; and for the same reason the difficulties themselves are less fixed and more amenable to change.

The accumulation of difficulties that lie in the path of a child with seizures or their equivalent, and interfere with his happiness and satisfaction, gradually mold him as an individual into a different kind of person from what he might have been under other circumstances. Physically and psychologically his interests and aptitudes might have guided him in certain directions, but when faced with the obstacles of his diseases and the attitude of the family and community toward it, his course of personality development may deviate from the natural direction.

With adequate information concerning the disease and the home setting it is often not difficult to understand the development of the child's problems. Previous to the onset of seizures the behavior of such children is not considered unusual by the parents. They may be somewhat overactive, "high strung" or "spoiled" by the family but not more so than siblings or neighbors. Parents frequently describe a change in the child's behavior at the time of their onset of seizures. He becomes irritable, nothing satisfies him, his span of attention is short, he sleeps restlessly, demands his own way, and if not given what he wants, pouts resentfully or goes into a temper tantrum. He seems to lose interest in things that he formerly enjoyed. From then on the situation grows steadily worse until he fights with his former playmates, needs constant supervision at play, and requires frequent disciplinary measures. School loses its attraction, and he spends his time annoying pupils and his teachers. School work suffers. Such instances are common among children with seizures and are enough to try the patience of the best of families. In such a situation lie the elements of permanent personality disorders, and while they may or may not contribute to the development of seizures at the start, if allowed to continue, they are likely to add significantly to the disturbance as years go on.

During the first weeks and months it seems unlikely that any true change in personality has occurred to account for the symptoms. Instead, the suddenly appearing behavior reactions represent additional evidence of the child's illness. Irritability, dissatisfaction, short span of attention, resentment, etc., are commonly observed in children with an undiagnosed subacute or chronic physical disease. While the nature of the disturbances going on in a child's brain at the onset of seizures cannot be defined, there is no doubt that some alteration in function is present to account for both seizures and the general irritability. To a degree, therefore, the abnormal behavior of a child with seizures should be considered as part of his disease and not necessarily requiring harsh, disciplinary measures. As time goes on, the irritability becomes less evident, but is replaced by behavior problems resulting from the methods of correction used.

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During the course of interviews with children at the Center we have made an attempt to gather information that would answer the question as to how a child feels regarding his disease. While not all children react in the same way, too often the child feels a horror and dread at the approach of a seizure. For years with each recurrent attack the expectation of dying may run through his mind. At the least suspicion of a warning aura he screams for help, runs wildly to mother for protection, but sometimes realizes that he falls down in a spell before help is available. He goes into the seizure in a state of panic.

Such a situation tends to drive children into one of two general directions. The forceful, robust child becomes the disagreeable, domineering bully who covers his fears and insecurity by a hard crust. The less forceful, less vigorous child reacts with a sense of shame and disgrace, withdraws into his shell, and leads a solitary, silent existence. He tries by quiet, over-conscientious effort to create a favorable impression and a place for himself in the sun. Both types of child lack the insight and confidence necessary to reach a satisfactory balance.

Whether or not psychological and emotional factors may cause seizures in the absence of other etiological influences is difficult to say. Many psychiatrists, particularly those of the Freudian school, have maintained that such cases are relatively common. Fremont-Smith has reported careful studies on individuals in whom it was found that the beginning of the disease had been associated with an intense psychological insult, and that in many of the recurrences the same situation was to some degree repeated. On the other hand Diethelm and Cobb are inclined to the view that personality disorders are precipitating and aggravating factors but not truly causative.

Little is known about the mechanism whereby such psychological and emotional factors affect the seizure state. Theoretically we would expect the autonomic nervous system to be involved in a fundamental way. It is known to be activated by the emotions and to cause definite change in cerebral circulation; it is also one of the great coordinating mechanisms of the body. However, methods for studying the effect of alterations in autonomic tone in human beings are not adequate at the present time. Other coordinating mechanisms of the body may also be involved, such as chemical mediators, enzyme systems and endocrines. The final common pathway through which personality disorders affect epilepsy must be in the field of physiology and has to do with local conditions in the brain that increase the irritability and explosiveness of groups of nerve cells.

The handicap of the seizure state that attracts most attention is that which results from incapacitation by the seizures themselves. While the importance of this aspect cannot be minimized, few people realize that an equally severe and common handicap to normal living may result from the personality maladjustment itself. In our present social organization a person with seizures is seriously limited in outlets and activities. So much effort is required to maintain his place among friends and to face the misunderstandings and prejudices that he meets, that life may become an unhappy struggle against insurmountable odds. In these circumstances frustration and resentment accumulate, and his behavior may become so abnormal that he cannot safely be allowed to remain free in society, and custodial institution offers the only solution. Even in children who have had the disease for relatively few years, activities and occupations may be limited by warped attitudes toward the disease and toward the right of others. The handicaps that result from personality maladjustments in patients with seizures tend to grow worse as years pass.

At the Governor Bacon Health Center our attitude is that our efforts shoud be directed toward stopping the seizures in order that we may attack by psychotherapy the more or less extensive personality maladjustments that so often overlay the seizure state. We have seen here already that successful treatment of the personality factors involved is sometimes followed by a cessation of seizures.

## PSYCHOSES IN THE NEGRO
### A Preliminary Study

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A general survey of the negro as a patient in the state psychiatric hospital is most interesting and valuable. Delaware affords an excellent opportunity for such a study because the patients are concentrated in a single and progressive center. By making use of the statistical figures of the census (1950), and the hospital annual report, much of the present status is revealed. From the figures, we are able to get an idea of structure and from the factors behind them, the problems for movement in mental hygiene.

The approximate negro population for the state is 12.5%. In the Delaware State Hospital the same population is 21%, for the in-patient census. For the out-patient clinic, it is 20%. In hospital patient movement we find 25% of the trial visit load is negro and the first admission rate is approximately 19.5%. When the in-patient population is broken down into classification, it is revealed that 19% of the schizophrenic population is negro, 37% of the "CNS luetics," 7% of the psychopathic personalities, and 14% of the senile psychoses. The differences in the groups are sufficiently large to be statistically significant, and thus discernible in psychiatric and socio-economic terms. Because of the one state hospital and clinic, it is safe to state that our figures are accurate for this group. The per cent of negroes receiving psychiatric help on the outside is very small, while that for the whites is somewhat larger.

In the analysis of our figures, it is seen that the per cent of schizophrenics in the hospital (the largest number of any diagnostic group) is roughly equal in the two groups. The negro has a larger number of general paretics, and a much smaller number of psychopathic personalities than in the white group. This is answered by the poorer hygiene and venereal control for the first group, and that the negro "psychopath" is more frequently cared for by other means, outside of the mental hospital.

As to a possible explanation of the over-all picture, it is seen that the incidence of psychoses (by admission to the state hospital) is appreciably higher among the negro than among the white. There are more acute psychotic episodes among the negro, as revealed by hospital movement. This might be explained by the greater number of psychoses of this group that are adaptive products of particular environmental forces to which they are subjected, ather than any specific racial behavior.

Among the negroes the general paretics are 38% of all hospital admissions for this diagnostic group, and for the alcoholic psychoses, it is 46%. The alcoholic psychoses and the "CNS luetics," are the most prevalent causes for admission, in the negro, and collectively almost equal all other psychoses combined. The largest discrepancy between white and colored admissions is in the field of alcoholic psychoses. Almost rivaling this is the "CNS luetics" including those with and without psychoses. General paresis is most prevalent.

In the senile and arteriosclerotic psychoses the negro is significantly lower, 14%. Female admissions exceed males in this diagnostic group for the whites, while the reverse is true for the negro. In the functional psychoses, the incidence among the negroes is lower than among the whites; 19% of the schizophrenics and 14% of the manic-depressives. In both groupes the females have a greater number of admissions for the schizophrenic and manic-depressive psychoses.

From the wealth of psychological data, it is safe now to state that there is no innate hereditary difference between white and negroes with respect to mentality (intellectual capacities) or to instinctual expressions of potential adaptabilities. In the more recent studies of the negro, we find much less concern about the significant roles of religion, art, and music, as manifestations of inherent emotionalism. The evaluation of this has usually been subjective estimations based on the standards of occidental culture. With the increased anthropological and ethnological data, emotional behavior and artistic productions of a race are approaching expressions of a cultural heritage and not expressions of a difference in races.

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Many of the expressions of a group are accumulations of traditions and experiences in that particular group. So, what has been considered characterological inherent traits in individuals of a given race are frequently definite colorings in the mode of expression of a basic psychical phenomenon. With more understanding of anthropological factors, we shall gain a better understanding of the characteristic racial peculiarities as they enter into the etiology of the particular psychic reactions. In our own clinical evaluations, a more uniform nomenclature is being devised which will facilitate such a study. This pertains specifically to the functional entities. At the present time a study is in progress to investigate any differences in the characteristics of the psychoses in negroes and the variations in the psychodynamics of such individual reactions.

### Conclusions

This study is the result of tabulating hospital statistics and working out the per cent of negroes in the total for each of the diagnostic groups. The results give a fairly accurate picture for the etiologies such as: organic, toxic and functional. Another report is in progress to reveal more dynamic features such as the specific factors for the group, functional. That is, tabulations of the psychological, and socio-economic factors in each case. It is felt at present that the differences in coloring, if it exists, can be explained environmentally. Observations indicate that there are characteristics which predominate in one group, although they are to be found in both.

It is shown that the incidence of psychoses among the negroes of the state of Delaware are almost twice that among the whites. Alcoholic psychoses and central nervous syphilis are the most prevalent causes for admission and are about 3.5 times more frequent in negroes than in whites; while the incidence of senile and arteriosclerotic psychoses among the negro is comparable to that among the white, and thus somewhat greater for that, from the population at large. The increased number of psychoses among the negro is probably of environmental origin. It is hoped that the ground work for mental hygiene movement is laid by revealing the differences that exist.

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## THE RATIONALE FOR IN-PATIENT TREATMENT OF EMOTIONALLY DISTURBED CHILDREN

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It is the writer's purpose to present a general discussion of the thinking and principles relevant to the in-patient or institutional treatment of emotionally disturbed children. Because of the inter-mingling of opinions and experience of the various people who have written in this field, documentation will not be attempted except to indicate that the writer has drawn freely from the reference sources listed in the bibliography.

The problem of the emotionally disturbed child is being considered with increasing concern. A study made by California's Inglewood Juvenile Maladjustment Survey indicates that: Of every 1,000 children in our country, 50-60 of them will have emotional maladjustments requiring psychiatric treatment. The extent of the problem thus obviously is great. This fact combined with the theoretical logicality that psychiatric treatment of the child will be preventative in reducing the incidence of adult emotional disorder suggests the need for strenuous therapeutic efforts. The largest area of effort has been in the outpatient clinic where the child is treated while remaining in the home environment. This appears to be the more desirable approach because the patient being a child is still in the process of physical and emotional development and maturation, and greatly needs the security of a home with the mothering and fathering attendant thereto. However, in many cases, the problem is of such a character or of such a proportion that it reasonably cannot be treated under out-patient conditions. At this point in-patient treatment must be considered.

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In-patient treatment like any other psychotherapeutic technique requires understanding of the basic, normal developmental processes and influences. Developmentally the child progresses from the wholly dependent, undifferentiated and yet demanding infant to the independent and highly individualized adult who hopefully is considerate of the needs of others. In this process of development there seems to be inherent the principle of needing to receive before being able to give. Thus the infant who receives adequate physical care provided warmly and affectionately is able to and usually eager to meet and master the environmental demands. This child desires to learn the skills of sitting, walking, talking and bladder and bowel control and to accept increasing personal responsibility in order to please the parents and continue the pleasures and happiness resulting from good parental care. As the child matures, the originally highly protective environmental framework is loosened and he is given the freedom of choice and decision which allows him to develop as an individual with a personality of his own. Training measures and the rules of family and personal living are introduced firmly yet tolerantly as the child physically is able to master them and intellectually able to understand the need for them. As these controls are accepted by the child and later internalized, we see emerging a truly social being. Throughout the developmental process there are inculcated those personal, family, social, cultural, national and religious ideals which are necessary for truly adult, altruistic living. Again I should like to emphasize that the gradual evolution of a mature, responsible adult does not take place unless the child's need for love and affection and personal gratification is met through warm, meaningful interpersonal relationships experienced normally in relation to the parents.

Deficiences in the environment which interfere with this normal process of development cause problems and disorders which may be sorted into three broad categories (not in themselves mutually exclusive). The first category might be termed "social". Gross inadequacies in physical and emotional care result from such things as poverty, illegitimacy and broken homes. Theoretically the provision for more adequate care through the medium of foster home or adoption should be sufficient to solve the problem for this child. However, in most cases there also exists a personality disorder variable in degree.

The second category is delineated in terms of the disturbance in the child, and can be described as a failure of organization in the personality. In this situation the physical care may be minimally adequate, but a lack of definity, routine and security in the environment result in the child having no pattern to follow in the course of his growth. In this type of disorder the primary treatment aim is to provide the previously lacking routine and consistency.

The third category also is in terms of the disturbance in the child and it includes all types of personality disorder resulting from the conflict situations or emotional involvements of parent with child, either with or without conscious awareness on the part of either. These emotional disturbances paradoxically are seen often in children coming from adequate homes provided for by responsible parents interested in and anxious to help their children. The explanation of this seems to lie in the fact that emotional blind spots, unconsciously prejudicial attitudes and consciously unrecognized needs in the parent (derived from the parent's own past experience) go unrecognized and act automatically to interfere with the natural developmental processes in the child. For example the oldest male child in a family may experience excessive restriction and over-protection because of the mother's unrecognized fear that he, being a boy, will turn out badly like mother's own oldest brother who is alcoholic and has a police record. Whether or not these true personality disorders require institutional treatment depends upon the character of the problem and its severity, and also realistically upon whether local resources for out-patient treatment are available.

Whatever the nature of the child's problem, it must be understood that the behavior of the child no matter how difficult nor how devious, represents his best solution to the problem of satisfying both his own inner needs and the demands of the external environment. For example, aggressive behavior may be a defense against loss of individuality or personal integrity in a situation where the child is being excessively dominated, restricted or over-protected by the parent. Similarly the symptom of withdrawal associated with excessive day-dreaming may be a defense against a reality world which appears too competitive and too threatening to the child. These defenses usually are developed instinctively without conscious awareness on the part of the child, and they are not relinquished by the child until the need for them is clearly felt to no longer exist. Convincing the child that the need does not exist is the first and perhaps the most difficult task of any treatment method. Paralleling the formation of these defenses there almost universally is a feeling of inadequacy or unworthiness. It results either from the the impact on the child of pure physical and emotional deprivation or from the frustrations inevitably associated with the more involved (neurotic) conflicts. These feelings also need to be neutralized as a first step in treatment.

Accordingly the residential treatment center in attempting to neutralize the feelings of inadequacy and persuade the child to lower his defensive barrier, prescribes a consistent, stable attitude of initial acceptance of the individual as he is. Along with this there also is a continuous interest in him and a real desire to understand and help him. Since such an attitude usually is unique in the child's experience, he is suspicious and the result is a temporary increase in the child's symptoms or in his difficult behavior as a part of a ''testing out'' which has the intent (usually unrecognized by the child) of provoking the adult. If the adult can be provoked into acting in the same manner as the previously significant adults in the child's environment, then he feels justified in continuing his defensive barriers. However, if the adult maintains the prescribed attitude unambivalently for a sufficient period of time, the outcome will be an increase in the accessibility and treatability of the child.

As intimated, the neutralization and persuasion is not direct and verbal, but indirect and emotional. The therapeutic effect is not through substitute mothering and fathering (since these have no substitute) but rather through numerous more dilute but nevertheless meaningful, gratifying experiences with the trained adult personnel. As the child begins to feel more accepted and more adequate as an individual and as he gradually relinquishes his defenses and develops more adequate ways of behaving, he has increasing ability to adjust to his social group. At this point planning and supervision allows for further good experiences in his relationships with other children. Also his improved personal integration allows for the introduction of activities and experiences, for example in the school, which are planned and dosed so as to allow mastery and continued maturation. At the same time the environmental demands are gradually increased and more limits are invoked so as to re-expose the child to the necessity of control in behavior and to allow him to accept and internalize these controls as he has the ability to do so. Desirably the environment allows for spontaneity and flexibility within a framework of consistency and predictability. Implicit always but never threateningly explicit are the usual codes and conventions of moral and social living.

This planning and structuring of the total environment must gain its know-how and take its cue from the understanding of the individual child. To this latter end the team of social worker, psychologist and psychiatrist functions in the initial diagnostic and formulative work-up, and in a continuous process of evaluation which makes certain that in the case of any particular child the environment is therapeutic for him. This same team is responsible for the dissemination of the know-how through the orientation and psychiatric training of all personnel having any responsibility to these children — particularly the cottage parents and the school teachers. Still further the child guidance team has the important function of carrying on group and individual psychotherapy in those cases requiring more intensive treatment. They also have the equally important job of working with the parents or the outside social agencies in providing optimum conditions for the child's return to the home. In some cases this may require actual planned psychotherapy of the parents under out-patient conditions, concurrent with the treatment of the child under in-patient conditions.

In summary emotionally disturbed children presenting certain types of problems may be helped through the residential treatment center. Such a center has a planned and structured total environment designed to aid and abet the normal processes of development and maturation through the understanding and meeting of the physical, emotional and therapeutic needs of the individual child. The total treatment effort of a necessity includes the parents in view of the ultimate goal of returning the child to the home and the community.

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## PEDIATRIC ACTIVITIES AT THE GOVERNOR BACON HEALTH CENTER

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This paper covers what was accomplished with respect to the children's health at the Governor Bacon Health Center during the past year.

The work described herein was done on approximately two hundred children admitted to this Center. There are four divisions, each of them comprising separate problems: 1. maladjusted; 2. rheumatic heart disease; 3. cerebral palsy; 4. seizures.

The first and largest group, of about 150 children, is the so-called maladjusted patients who need the close supervision of a child psychiatrist, a pediatrician, and consultants in specific fields of therapy. Every child who is admitted to this Center undergoes a thorough physical examination done by the resident pediatrician, x-rays are made of the chest, and complete blood count, blood chemistry, urine analysis and Wassermann are done. The children also receive upon admission a Schick and Schick control test; those with positive reaction are given diphtheria toxoid. Where there is no history available concerning previous immunization, the children under the age of ten years receive a triple vaccine of pertussis, tetanus, and diphtheria.

We have had 4 cases of whooping cough in the age group 6-9 years; all colored children. In the treatment of whooping cough we used human hyperimmune serum from Philadelphia, 2 to 3 vials 24 hours apart, and a half gram of Streptomycin divided into two doses daily. The number and severity of paroxysms, whooping speels and attacks of emeses decreased sharply in three to four days. With the decrease of the severity of paroxysms the patient's appetite was improved. The results were very good on the basis of general clinical course and appearance of patient. The children were discharged in two to three weeks following onset.

We had during the spring months a light outbreak of influenza. The incubation period was short, usually 1-3 days. The onset was abrupt, the symptoms were chills, fever, anorexia, headache and muscular pains. The coughing was common but not productive. Fever was remittent and persisted from two to seven days. The white blood count showed leukopenia, the leukocyte sedimentation rate was increased, and cultures of blood were sterile. Mild cases were treated symptomatically with aspirin and bedrest. The children were isolated, and abundant fluid and a high amount of vitamins were given. The more severe cases were treated with aureomycin, 250 mg. every six hours; those treated with aureomycin responded promptly and no complications were noted. The duration of the disease in the group of children treated symptomatically without aureomycin was prolonged and cough persisted from one to two weeks.

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We found that almost all children previous to the onset of influenza showed symptoms of behavior disorders which subsided after recovery from the disease.

The children living in separate cottages, according to the age group, usually 8-10 in one cottage, are under the supervision of a housemother who is in continuous contact with a child psychiatrist and pediatrician, and reports to them not only the behavior of each individual child but also his physical condition. The children from these cottages are checked at least once a month, and their weight and height is recorded. At the present time we are contemplating following the growth according to Wetzel's grid technique and BMR determinations. The children are seen once a month in our clinics by specialists in the various fields, such as skin, eye, ear, nose and throat, and dentistry. In cases of emergency the same specialists are called upon to visit the children. Tonsillectomies and adenectomies were performed on 5 children who have had markedly enlarged tonsils and adenoids.

The resident pediatrician is in continuous contact with the child psychiatrist and attends the meetings of the psychiatric staff where the problems of the child's personality is discussed.

The second group comprises about 12 children with rheumatic heart disease. Soon after admission an x-ray of the chest is made, sedimentation rate, complete blood count, and electrocardiogram are done. The fundamental treatment during the active stage is rest and salicylates. Absolute, early, permanent, and sufficiently prolonged bedrest is used even in the mildest cases. According to experience apyrexia does not exclude activity of the process. The transition from bedrest to normal activity is very gradual and is based on exercise tests. The dosage of salicylates ranges from one-half to one gram per day per year of life. Salicylemia is higher when paraminobenzoic acid is used. In moderately severe cases salicylate treatment is given for at least forty-five days. Vitamin C in high dosages are given. After prolonged use of salicylates prothrombin time is determined, and in case of increased prothrombin time vitamin K is given. For precordial pains we use codeine rather than morphine. For prevention of recurrences and reduction of streptococcic infections of the upper respiratory tract sulfomonamide treatment in daily dosage of one gram during the winter season is given. Some of the children with previous rheumatic heart history received during the winter season 50,000 units of penicillin tablets every three hours for one week.

The housemother or the nurse is instructed concerning proper hygiene, diet, and avoidance of colds. The children who are confined to bed for longer periods of time are provided with special recreation programs and teaching facilities.

The third group comprises about 30-40 children who are victims of cerebral palsy as a result of birth injury, or congenital. Among this group of children we have a few victims of polio with weakness of different groups of muscles and also victims of meningitis or virus encephalitis. All these children receive physiotherapy under strict orthopedic supervision. They have a special skillful staff of physiotherapists, nurses and teachers who use every psychological and occupational means which can be devised to encourage these handicapped children to use their weakened limbs in as normal a fashion as possible. Among these children we have had an outbreak of measles epidemic. The first case of measles was immediately isolated and all children in this ward received immune Gamma globulin. Children under five years of age received 2-3 cc intramuscularly. All children in this ward have had a modified type of measles. The incubation was prolonged three weeks. The fever in a few cases was the only symptom. The rash was slight. Koplik spots were seen in only a few cases. All cases recovered uneventfully without complications.

The fourth group comprised the children with seizures. They are kept in a separate building. The etiology of the seizures is variable. Inasmuch as the etiology of the seizures in many of the children is unknown, and in many others the precipitating factors were found to be common contagious diseases, such as whooping cough, measles, polio encephalitis and trauma. It seems that prevention and proper therapy of common contagious diseases should prevent the occurrence of these seizures. It would seem that in the present era proper immunization of the children, and with booster dose later, should prevent or modify some of the common contagious diseases. Whooping cough if contracted should be treated with hyperimmune serum and streptomycin or aueromycin or chloramphenicol in order to decrease the severity and number of paroxyms. The children under the age 4-5 years should be protected from measles by gamma globulin. Pregnant women should be protected from exposure to German measles. It would be advisable to protect the children from consequences of these common contagious diseases as much as we are unable to protect them and prevent the seizures of unknown etiology.

All children in this group receive a thorough physical examination and complete laboratory work, including electroencephalogram. Thus the frequent seizures receive a suppressive therapy consisting of phenobarbital, dilantin, tridione, mesantoine, or some of the newer preparations. Occupational therapy and teaching facilities are provided for these children according to their abilities.

Electroencephalogram has been particularly valuable in diagnosing epilepsy, and is feasible in children whatever their age. Even if the child moves during the recording period, the tracings can be utilized. Such movements appear as artefacts in the record and are easily distinguished from the valid part. Abnormal patterns are obtained in many disorders of children. The outstanding pathologic change is the appearance of abnormally slow waves. Changes in the tracings of the epileptic disorders are characterized by the paroxysmal appearance of abnormal potentials such as high voltage slow waves, high voltage fast activity, and composite patterns such as spike wave patterns.

Among the children with seizures of unknown etiology a history of excitement, fear, anxiety, or resentment sometimes precipitated epileptic seizures.

The treatment of the personality factors in these cases sometimes follows cessation of the seizures.

### Summary

The efforts of the staff at the Governor Bacon Health Center are directed toward one goal and this is to help the children grow up and provide our children with qualities for assuming places in society as well-equipped human beings who can stand on their own feet. This task can be accomplished only by the guidance of their physical and mental health. Many symptoms of behavior disorders and personality disturbance are a result of some physical handicap, and many somatic symptoms may be the result of emotional conflicts.

It would be a serious mistake to stress the importance of physical symptoms and neglect the emotional factors involved, as well as to overlook the organic cause of emotional or neurotic disturbance.

Only by close cooperation of a pediatrician and child psychiatrist in a child guidance center is it possible to arrive at a correct diagnosis and successful therapy.

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## BILATERAL PREFRONTAL LOBOTOMY
### A Case Report

C. Lawrence R. Souder, M. D.,*
Farnhurst, Del.

The following case is one of a white, male patient who is 35 years of age. He was born in an urban environment and has lived in Delaware all of his life. He attended parochial school for a number of years, later transferring to a public school. There is no history of nervous or mental disease in the family.

Patient is married and has two children, boys, ages six and seven years. His personality before his mental illness was described as that of an extrovert. He was sociable and friendly. His occupation had been railroad brakeman for nine and one-half years. His health had always been good.

This patient's wife stated that his mental symptoms were present since November, 1948. She described him as being "nervous and jittery" and unable to concentrate at work. There was a statement of some sexual impotence and he became overly religious about a year before commitment. He showed compulsive features including unprovocative laughter and complete lack of self-control.

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He was admitted to the Delaware State Hospital by voluntary commitment certificate. His obsessive-compulsive pattern was prominent. Echolalia and echopraxia were present from the beginning.

Psychological tests done in May 1949 showed that he read much better than he was able to understand or integrate. These tests showed extreme deficiency in his reasoning and conceptual ability. They showed him to be of average intelligence at that time but with severe misinterpretations of reality and of dysfunctioning in the psychomotor area.

Physically he was of the mesomorphic physique. Laboratory tests, x-ray examinations and blood serology were negative.

In May and June, 1949, he received intensive electro-shock therapy which was followed by insulin coma therapy. There was very little change noted in his mental symptoms, and it was thought that he might be able to learn some different routine by working on the farm or in one of the occupational therapy groups; however, these proved likewise ineffectual in doing away with his stereotypical activities and his compulsive and hebephrenic behavior.

It was believed that this patient might benefit from a lobotomy by interrupting the pernicious cycle of compulsive, repetitious drive which was so prominent. A bilateral prefontal lobotomy was performed on this patient on November 17, 1949, for possible relief of his schizophrenia and in order to make him an easier nursing problem.

Within ten hours after the operation he responded verbally. Post-operatively his general physical condition came along satisfactorily. The repetitiousness and stereotypy of his manner of conversation was unchanged. There was noted within the first two weeks post-operatively that patient had more emotional apathy added to the picture but his compulsive traits seemed unaltered. One asked him, for example, ''How do you feel?'' and he would answer, ''Fine. How are you? Do you feel fine? Do you feel good? Do you feel fine? Do you feel alright?'' For some time after the operation he counted objects continuously.

For several months following the operation he was incontinent and untidy in his habits. It was impossible to hold the patient's attention for any length of time. He still remains distractible and turns from one thing to another in a very short time. He responds to questions in a repetitious fashion, suggestive of perseveration. He often indicates the feeling of not being well, although he cannot quite verbalize it.

Tests to determine his post-operative psychometric pattern were done on February 24, 1950. At this examination he was extremely restless and distractible. Verbal responses were stereotyped and perseverative. Drawings revealed splitting as well as perseveration. He never understood the directions for the tests. Only in reading did he perform at better than moron level. He read rapidly and well and, in fact, better than the average person.

Post-lobotomy test scores show a decline in every instance except in reading, and losses were frequently as great as fifty points. Psychological tests showed that he was so disorganized in personality that even his score approximating intellectual potentiality had declined. Only the good reading score had remained as an indicator of his previous intellectual status.

The Rorschach test confirmed this picture of personality disturbance.

At the present time he paces back and forth on the corridors of the ward and sings phrases in his own characteristic manner and tune. Commonly repeated are such phrases as the following: ''California, here I come, straight back where I started from;'' and ''Open the door, Margie, and let me in.''

In conclusion this is a patient whose schizophrenia has developed outside of the adolescent period. He shows definite splitting of the personality. It was developing insiduously for some time before he was no longer capable of continuing his work. Convulsive therapy with electro-shock and insulin coma therapy had very little effect on the psychosis. An attempt was made to establish contact with reality by assigning him to the farm and to occupational therapy groups with no success. At this time, eight months after a bilateral prefrontal lobotomy was done, he is physically well, but mentally there is disharmony and a splitting of the personality characterizing schizophrenia.

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# INSULIN THERAPY:

## An Evaluation of 47 Cases

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Farnhurst, Del.

In 1933, a new era of somatic therapy in psychiatry dawned following Manfred Sakel's presentation of his work on hypoglycemic coma at the University Clinic in Vienna. Insulin coma therapy has now had over a twelve-year trial in the United States with favorable results in the treatment of schizophrenia.

This paper is written in order to evaluate a two-year study of insulin therapy in acute male receiving service of this hospital. The period is from August 1948 to August 1950. A total of 47 patients were treated during this period.

The cases selected were all diagnosed as schizophrenic. The greater majority were of the paranoid or catatonic excitement type. The ages of the patients ranged between the second and third decade of life; however, there were two exceptions. One patient was 38 years, and another patient, diagnosed as a juvenile schizophrenic, was 15 years of age at the time of therapy. In all these cases complete physical examinations, neurological and laboratory work were performed in order to rule out any pathology.

A course of treatment lasted for approximately 13 weeks with four treatments per week. A total of 45-50 comas is what the therapist desired during the treatment.

At this institution the Shurley procedure as written in the Veterans' Administration Technical Bulletin has been adopted. The patient is first tested for sensitivity to insulin, either allergic or hypoglycemic. He is given 10 units of regular insulin twice a day for two days. If he does not show any signs of sensitivity, insulin coma therapy is begun. As Shurley states, his aim in therapy is the protection of the maximum physiological effect over the maximum duration of time using the maximum dose of insulin consistent with safety to the individual patient. On succeeding days, insulin is administered intravenously beginning with a dose of 40 units on the first day and increasing by geometric progression until a coma dosage has been reached. Once the maximum coma dosage has been reached, we start leveling off until we reach a minimal coma dosage. The aim of the therapy is to have the patient in coma for at least an hour during the treatment. The treatment is terminated by giving intravenous hypertonic glucose 50 cc. of 50% solution and supplementing with oral feeding of karo syrup and orange juice. The higher anatomic and more recent phyletic layers are at first inhibited by the insulin and eventually the more primitive layers of the brain are acted upon. When the medulla oblongata with its vital centers—cardiac, circulatory, and respiratory — begins to be functionally inhibited by the insulin, the therapy is terminated within 15 minutes. Observation of symptoms in insulin shock therapy is shown below.

| Stage | Consciousness | Motor Symptoms | Other Symptoms |
|---|---|---|---|
| 1. | Drowsiness | Hypotonia | Perspiration<br>Hunger |
| 2. | Clouded consciousness<br>Confusion | Tremor<br>Motor restlessness | Perspiration<br>Fall of temperature<br>Slurred speech |
| 3. | Loss of consciousness<br>Stupor | Grimacing<br>Myoclonic twitching<br>Clonic spasms<br>Motor excitement<br>Primitive movements | Exopthalmus<br>Dilated pupil<br>Light reaction present<br>Perspiration<br>Salivation |
| 4. | Deepening stupor | Coarse tremor<br>Clonic spasms<br>Tonic spasms | Pupils small or large<br>Conjugate deviation<br>Salivation<br>Perspiration |
| 5. | Coma | Glottal spasms<br>Tonic Extensor Spasms (in deep coma) | Pinpoint pupils<br>No light reaction<br>No corneal reflex (or very sluggish) |

The treatment is begun at 7:00 a. m. and terminated at 10:30 a. m. The doses are regulated in order to throw the patient into coma at 9:30. A physician and a graduate nurse with two student nurses are present during the treatment. The nurses check the pulse, respirations, and pressure of the patient every 15 minutes and write short notes con-

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Modified from Frostig, W. B.: American Journal of Psychiatry, March, 1940.

cerning the patient's behavior on a special chart. Certain complications have to be looked for, namely: prolonged stupor, respiration complications, cardio-vascular complications, convulsions, and insulin allergies.

Prolonged stupor must be treated as a case of shock with blood plasma, cortical extracts, and stimulants. Over a two-year period we had two cases of prolonged coma. Both recovered after 24 hours following treatment with fluids and stimulants. We had one mortality during that period. This occurred in the oldest patient of the group, a 38-year-old man, who died while receiving his third injection of insulin. The pathologist's report was cerebral edema compatible with insulin shock.

Out of a total of 47 patients treated with insulin therapy, 15 have completely recovered and are leading happy and useful lives. Four have improved to an extent that they are able to work in the hospital and go home on weekends. The other 28 cases did not show any change.

On further analysis of the 15 cases that recovered, the great majority of those patients were not ill for as long a time prior to the treatment as those that did not recover. This follows the concensus of opinion that there is an inverse ratio between the duration of illness and recovery. Hereditary tainting did not seem to have any appreciable effect on this small number of cases. The age factor was not important, as most of the patients were of the same age group.

Our group agreed with most statistics throughout the country that catatonic and paranoid types of schizophrenia respond much better than simple or hebephrenic types. Our results with the latter two types were very poor. Another important factor was that a great percentage of those that recovered seemed to have a stronger pre-psychotic personality structure to fall back upon. Their level of education and social and economic backgrounds were uniformly greater than those that did not recover. It was also noticed that the more athletic and mesomorphic the body structure the better the prognosis.

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# THE CONCEPT OF THE PSYCHOPATHIC PERSONALITY

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The basic requisite in the understanding of the *psychopathic personality* is the understanding of the *normal personality*. The normal personality is a concept which is referred to the average individual in cultural environment at a specific time. The normal personality changes from one country to another and from one time to another. The normal personality in the Middle Ages in Europe at a high social level was the tough lover-warrior. In the Renaissance in Italy there was a high-cultured, free-moraled, subtle cortesan. We know that the so-called normal personality is a conventional concept and we also know that it is not a perfect idea but it is a practical one. After the concept of a normal personality we go to the concept of an *abnormal personality,* which is one that does not fit into the average cultural milieu at any time. It is the "sort of queer", peculiar personality in the way of living, thinking and acting. Of course, this abnormal personality depends so much upon the social environment that a man in Europe would be completely accepted as normal in his own country and yet might be considered a "queer guy" in this country. There are two types of psychopathic personality — one in which the individual suffers within himself and one in which the psychopathic personality causes society to suffer because of his defects.

In order to study the psychopathic personality, we have studied several personality traits, which are mentioned separately only because of didactic purposes, but the personality as a whole works together and cannot be separated. These traits are intelligence, conscience, emotional reaction, social development and several secondary factors, such as work, social adaptation and hobbies, presence of symptoms, object interest and internal conflicts.

Intelligence is the ability to learn. The intelligence in a psychopathic personality ranges from normal to genius, but it is rather selfish, intellectual thinking that is only following his desires and ambitions without regard for the desires and ambitions of his fellow-man. His intelligence is lacking in the grasp of reality. He is not able to sacrifice immediate pleasures for future gains. He lives for the moment without any plans for the future. He only sees what he wants and how to get it immediately.

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Conscience is the result of training and socialization taught in childhood by the parents who are the external rulers of our behavior. Afterwards the external controls of the behavior are absorbed in our personality and made internal and automatic. This means that in childhood children need to be taught what to do, and what not to do, and to become cognizant of the differences between right and wrong. When they are adults they will not need their parents to tell them when and how to do things and when not to do them. They have their social training within themselves in an automatic and unconscious way. We do not need to think about not doing things against the law. The conscience is definitely lacking in a psychopathic personality. His primitive, uncontrollable mind in the presence of stimulation satisfies his animal desires. There is no doubt, no fight with himself. It is a simple reaction following the "pleasure principle."

The psychopath is not able to make a definite difference between right and wrong. He has no feeling of remorse for evil behavior. He is also unable to feel satisfaction for good behavior because of his lack of conscience or super-ego. He does not feel moral obligations — ethics — he cannot stand the discipline of the army or of an institution. He cannot stand orders and he is always quick to have an excuse for himself or to blame others for his own faults and misbehavior. The psychopath is not able to work steadily. We had a twenty-five-year-old patient at the Delaware State Hospital who had only three jobs, each for only a short space of time. From the first job he was discharged after two weeks. In the second he quit after a little while "because I don't like night duty." He was also discharged from his third job. During work he gets tired very easily, in spite of the fact that he is strong and healthy. He gets no satisfaction from his social productivity. He comes to work late and does not lose a chance to relax on the job; but this same man who is so easily fatigued at work is able to go hunting or play cards several nights a week without sufficient sleep. Sexual development is quite immature in a psychopath. He is not able to feel love for anyone but himself. He makes a foolish marriage and it often ends in divorce. He is unable to feel love as a matter of giving and getting. He only wants to get and not to give. A psychopath we had in the Delaware State Hospital was in love with a girl because "she has been very faithful to me, and takes care of me."

Most psychopaths are very unsatisfactory parents and their children are apt to develop behavior troubles, neuroses or psychoses.

A psychopath is unable to feel "object interest." He is not able to understand other people. They only treat others in a way that will "get them something." He has no friends most of the time. The only friendships he knows are his associates in misbehavior, drinking, gambling, and crime. He does not feel the pleasure of sociability or have an appreciation of human contacts. Many times the psychopath, when he has some schooling, always impresses other people, but only for a short time. People like hım the first time they meet him, but never the last day they know him. In the meantime, he has had opportunities to bribe or cheat his acquaintances. His special modes of adjustment are by using "crutches" such as alcohol and narcotics which sometimes save him for a while, but most of the time he is enmeshed in a vicious circle which pushes him down slowly but surely to the bottom of human relationship.

The psychopathic personality is also called character neurosis because the symptoms are behavior symptoms. If a neurotic has symptoms like hysterical paralysis or vomiting, these are physical manifestations of his neurosis. In similar vein, a psychopath would produce physical manifestations by his behavior according to his environment. This is the main difference between neurosis and psychopathic behavior. In the neurosis the symp-

(concluded on page 224)

# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Articles are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 August, 1950 No. 8

## PREPAREDNESS

For the past five years the people of the United States and other democratic nations have realized that the "cold war" organized and exercised by the Soviet Government cannot remain "cold" forever.

Many prominent statesmen prophesied years ago that a Third World War was inevitable. However, there was always present the hope that such a tragedy could be avoided and for this reason the aggressive feeling necessary for the successful approach to the problem was lacking.

The sudden onset of hostilities in Korea aroused this feeling of aggressiveness with a full determination to victoriously accomplish the task assigned to the entire group of democratic nations. From a psychiatric viewpoint the emotional reactions in our country are much healthier than that encountered in the communistic world. The purpose behind the aggressiveness must assume a more idealistic aspect or the people will become bored with a situation which no longer causes emotional reactions because continued stimulation will lose its effectiveness. However, we must not forget that a nation trained to implicit obedience working under a yoke of inferiority and fear can fight tenaciously and with aggression. But this aggression is not as enduring, since the presence of fear causes a conflict which lowers individual efficiency under prolonged stress.

People who have enjoyed freedom and individual rights do not become afraid when this freedom is threatened but become aggressive without fear, since each individual is fighting for something which belongs to him, as well as for the ideals of a nation. Let us state it this way: free people react with aggression due to anger; totalitarian people react with aggression due to fear. Of the two, anger is the more healthy emotion and therefore the more productive and enduring from a psychological as well as a physiological viewpoint.

During the past one and a half centuries our country has become one of the most powerful nations in the world. At the same time it has never been confronted with such a ruthless, immoral, selfish and powerful organization, which is determined to destroy every free nation in the world.

If we are sufficiently realistically inclined to the present situation we must face the actuality that the Third World War has definitely begun in Korea and therefore we should courageously face this reality.

At no time in the history of this country has unity of our people been as essential as it is today. We should not wait until we are forced to unite our efforts, but should begin at once with general mobilization of our military, industrial, professional and social forces, and be prepared for any eventuality. This is the time for our medical profession to assume its responsibility in all areas of medicine.

Each community should be prepared for any local or national war catastrophe. Delaware is certainly a very vulnerable spot. We should be prepared to protect our injured, wounded, sick and disabled, particularly children and aged, in such areas where they can be treated and cared for. Somewhere, outside of the city of Wilmington, there should be an underground hospital area.

It is true that the fifty-two democratic nations may avoid the Third World War in intensity, yet we have already paid dearly for our unpreparedness in the past and we should not repeat the same mistake.

### President Scull Dies

It is with more than usual regret that we note the death of Dr. Carl B. Scull, Jr., of Dover, on July 25, 1950. In the 161 years since the incorporation of our Society this is only the third occasion on which our President has died while in office, the first being James Tilton in 1822, then Henry F. Askew in 1876, and now Dr. Scull. We know we express the feelings of every member when we say that the Society has lost an earnest, conscientious and cooperative officer, whose early demise seems most untimely. Dr. Scull's obituary will appear in the September issue.

Dr. Lawrence L. Fitchett of Milford became President automatically at the death of Dr. Scull. Dr. Fitchett is stepping into the breach like the good soldier he is and, despite the shortness of time left before the Annual Session, is preparing to carry out in full the duties of his office, in which task we all wish him the utmost success.

## THE CONCEPT OF THE PSYCHOPATHIC PERSONALITY

(concluded from page 222)

toms are autoplastic (in the same body); in the psychopathic personality they are external — alloplastic.

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## WOMAN'S AUXILIARY: M.S. OF D

**TUESDAY, OCTOBER 3, 1950**

Program in Preparation

10:00 A. M. — Business Session
12:30 P. M. — Luncheon (State Society)
2:00 P. M. — Business and Social Session
Guest Speaker to be Announced
6:30 P. M. — Reception and Dinner
Maple Dale Country Club

## OUTLINE OF PROGRAM MEDICAL SOCIETY OF DELAWARE PEOPLE'S CHURCH COMMUNITY HALL

**Bradford and Reed Streets**
**Dover, Del.**

**MONDAY, OCTOBER 2, 1950**

6:30 P. M. — Meeting of the Council
8:30 P. M. — Meeting of the House of Delegates

**TUESDAY, OCTOBER 3, 1950**

9:30 A. M. — Invocation: Rev. William F. Edge

Address of Welcome: Hon William J. Storey

Report of the House of Delegates

John F. Hynes: Combined Radical Resection of Hypopharynx, Larynx, and Cervical Nodes, with Esophagoplasty.

David A. Cooper: Anti-biotic Therapy

12:30 P. M. — Luncheon (State Society)

2:00 P. M. — Joseph Hughes: Treatment of Anxiety States

William D. Stroud: Coronary Artery Disease

Joseph B. Vander Veer: Anticoagulant Therapy in Acute Myocardial Infarction, Venous Thrombosis, and Pulmonary Embolism.

Joseph C. Yaskin: Neuropsychiatric Emergencies

6:30 P. M. — Reception and Dinner
Maple Dale Country Club

**WEDNESDAY, OCTOBER 4, 1950**

9:00 A. M. — Movie: Arthritis, Rheumatism, etc. and ACTH, etc.

A. W. Pennington: Use of Fat in a Weight Reducing Diet.

L. Kraeer Ferguson: The Surgical Treatment of Ulcerative Colitis.

Lawrence L. Fitchett: Presidential Address.
Election of President-elect (Sussex County)

12:30 P. M. — Luncheon (Kent Society)

2:00 P. M. — Rufus S. Reeves: Tuberculosis in Small Communities

William G. Leaman, Jr.: Rehabilitation Following Acute Myocardial Infarction.

Edward L. Bortz: The Biology of Aging

Alvin W. Howland: The Treatment of Glaucoma

5:30 P. M. — Adjournment:

# PERSONALITY PROBLEMS OF JUVENILE DELINQUENTS AS REVEALED IN PSYCHOLOGICAL TESTS

Joseph Jastak, Ph. D.,*
and
Lois G. Gilliland, Ph.D.
Farnhurst, Del.

Poverty, inadequate housing, absence of recreational facilities, disrupted homes, irresponsible parents, and other destructive social influences are usually cited as the causes of delinquency in children. These so-called causative factors persistently reappear in statistical surveys made by schools, courts, and social agencies. They are also conspicuous in the majority of delinquent children examined at the Mental Hygiene Clinic.

Statistics are known to be quite flexible in that they "prove" anything we wish to prove. Before the results of delinquency surveys are accepted as valid, they must be subjected to more vigorous controls, both in the collection of data and in our thinking, than has so far been done. First, statistics are obviously biased by the fact that poor and destitute delinquents need the help of courts and clinics more often than do delinquents of well-situated parents. Second, many children of poor and inadequate parents turn out to be law-abiding citizens despite the harmful influences they had been exposed to from birth on. In fact, the majority of brothers and sisters of delinquents are no less normal than are average children from more fortunate environments. Third, many delinquent children remain delinquent even if appropriate social reforms and improvements are instituted for purposes of treatment or prevention.

When placed in a substantial home, the delinquent may run away and continue to engage in anti-social activities. When given understanding and responsible foster parents, he usually disregards their wholesome influence, their authority, and rejects their sound counsel. When given opportunities for supervised recreation, he uses these facilities to disrupt the work of trained counselors, refuses to abide by the rules of fair play, and is destructive to property and other members of the group. When given money, he spends it foolishly for socially negative ends.

We might repeat the fond rationalization that once a child is habituated to anti-social behavior he will continue to be delinquent irrespective of the changes made in his environment. On the other hand, if the removal of the damaging conditions mentioned at the beginning of this paper does not produce improvement in adjustment they may be accessory determinants of delinquency and not their real causes. It is the experience of mental hygiene workers that neither improvements nor cures are achieved by mere environmental reforms.

Whether a delinquent girl or boy improves does not depend so much on the degree and nature of social abuse suffered but on how he reacts to that abuse. His reactions to neglect, cruelty, poverty, and abuse depend in turn on his basic personality structure. If his personality is sound, he will withstand the effects of the most deleterious living conditions. If his personality is unsound, he will not adjust to the best environment society can provide. Under environment we include the emotional, intellectual, nutritional, physical, and social circumstances under which children live.

All delinquent acts are learned acts, but they must fall on fertile soil to take root and to grow to the proportions witnessed in anti-social individuals. In addition to having unfavorable home conditions and inadequate parents, delinquent children also have severe personality defects which must not be ignored in the treatment and prevention of delinquency. Improvement in living conditions will accomplish little or nothing if systematic retraining and prolonged therapy of the child himself are left out of the treatment program. The outcome of even the most propitious and most thoughtful systems of treatment may be entirely negative if the personality defects are severe enough to interfere with the establishment of emotional control and with the capacity to learn from experience. The real causes of personality defects in delinquent children are not known, but their existence is an undeniable fact. This fact alone should make those working in the area of delinquency far more cautious than they have been in espousing plausible but unscientific theories of the causes of anti-social behavior. Social reforms and economic betterment are important issues in their own right, but their relationship to delinquency is quite indirect and often irrelevant.

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The personalities of the parents of delinquent children and their offspring tend to be strikingly similar. It is therefore likely that some unknown but deep-seated and prepotent factors are the true causes of destitution, immorality, and delinquency of parents and their children.

What are then the personal problems of delinquent children as exhibited in the results of psychological studies? We will illustrate their difficulties by investigating the records of 50 white delinquent boys and 50 white delinquent girls who were examined by the Mental Hygiene Clinic between the years 1941 and 1948. The average age of our delinquent boys is 12 years 9 months, that of our delinquent girls 15 years 1 month. The boys are, as a group, almost 2½ years younger than are the girls. Boys display their delinquent tendencies earlier than do girls and they are also more overt and more aggressive in their offensive behavior. They come to the attention of courts and clinics at a more tender age. The reasons for referral to the clinic may be roughly classified under four categories:

| | **Boys** | **Girls** |
|---|---|---|
| Stealing | 50% | 12% |
| Sex offenses | 4% | 40% |
| Truancy | 16% | 8% |
| Incorrigibility | 30% | 40% |

The most common reason for referral of boys is stealing in its various forms and degrees. Girls are referred as incorrigible and sex delinquent in equal numbers. Some sexually maladjusted girls are euphemistically referred to as incorrigible. It is probable that children start stealing at an earlier age than that at which they become sexually delinquent. Sexual delinquency is not as readily brought to public attention as is stealing. Hence, the younger age of our boys in comparison with the ages of our girls.

All the children were examined by means of the Wechsler-Bellevue Scale for Adolescents and the Wide Range School Achievement Tests. From the results of these tests, the personality factors were calculated by a method worked out by Jastak (1,2).

1. *Intellectual capacity.* The average capacity quotient of the 50 boys is 109 and of the 50 girls 103. Their intelligence is distributed over all ranges from defective to very superior. The lowest quotient in our group of 100 is 68, the highest 141. Delinquent children do not differ significantly in native endowment from that of non-delinquent children. They are reasonably bright and have average capacity for success. It takes as much brains to be successfully delinquent as it does to be successfully conformist. Differences in intelligence do not explain why some children are delinquent and others not.

Perhaps, the manner in which their native capacity is realized will shed some light on their adjustment problems.

2. *Language development.* The social functions of verbal mastery are partly independent of intelligence. When this ability is measured apart from the capacity of the child, delinquents are found to be consistently and severely deficient in it. They begin to talk late. They suffer from serious and debilitating speech defects long before they become delinquent. They are slow in learning to read, write and spell. Their early and continued failures at school are important contributing factors to delinquency.

The average language quotient of our group of 50 boys is 76 and of our 50 girls 77. Fully 85% of the entire group are definitely below average in the expressive phases of language symbolism. These children develop few positive cultural interests and completely fail in all academic work. Their grammar is crude, the extent of their knowledge poor, their literary tastes non-existent. The refining and socializing qualities of language are conspicuous by their absence in delinquent children.

The nature and chronicity of these disabilities is suggestive of an organic etiology.

3. *Reality perceptions.* This trait is related to the manner in which a person maintains active contacts with people and environmental events. The average reality quotient of the

boys is 96, of the girls 88. Delinquent boys tend to fall within normal limits in the area of reality contact. They are alert, aggressive, sociable, talkative, and extraverted. They do not as a rule withdraw from life but, on the contrary, take an active part in all that is going on about them. The girls are less realistic than the boys. The differences in reality perceptions between boys and girls are great enough to approach statistical significance. Submissiveness, suggestibility, and distortions of reality are common among sexually unadjusted people. Over 50 percent of the girls lack the ability to express their native potentialities in an objective and sensible manner. Only 20 percent of the boys lack normal judgment and reasoning in practical matters. With the exception of a sizeable group of inadequate girls, the reality trait is not a basic factor in delinquency, though its normal functioning contributes to the maladjustments if its contrast with other, especially defective traits, is great.

4. *Motivation.* The average motivation quotient of our 50 boys is 73, that of our 50 girls is 81.

Both groups are distinctly handicapped in this area of adjustment. The boys are especially poor in perseverance, emotional self-discipline, frustration tolerance, and conformity to ordinary standards of living. The girls are significantly better than are the boys in this trait, but their somewhat higher motivation for work and conformance is counteracted by their lack of practical wisdom and realistic thinking.

Nearly 90 percent of the boys are inferior or defective in goal striving, dependability of action, and consistency of behavior. Defects in powers of motivation and self-control are the most commonly observed signs associated with all types of delinquencies.

5. *Psychomotor efficiency.* Inability to use one's limbs and other body organs efficiently may become an insidious social liability. It is a deterrent to normal adjustment regardless of the degree of intelligence present. That juvenile delinquents suffer from dyskinesias, muscular incoordinations, and the emotional deviations typical of such disturbances has been known for some time. Our findings confirm previously reported results. Delinquent boys are inferior in most muscular skills. They engage in a great deal of manual planning and building because of their good contacts with reality, but they abhor the fine muscular skills that most people have to develop to be successful in their daily work. They favor the gross mechanical occupations but their motor aptitudes are singularly inconsistent and deficient. They lack grace of movement, they delay the effective mobilization of physical energy, they are clumsy, jerky, and impulsive in overt behavior. Their somatic efficiency quotient is 83. The girls have a psychomotor quotient of 90.

Delinquent girls have fewer difficulties in the motor area than have boys, but their variability is greater than that of boys. Recent electroencephalographic literature reports that up to 80 percent of children with delinquent tendencies and other serious behavior problems have abnormal brain wave tracings. The psychological and electro-encephalographic studies are in agreement by pointing to a possible neuro-physiological basis of the personality disturbances observed in anti-social children.

### SUMMARY

The average male delinquent in our group has average intellectual capacity. He is capable of approaching life with a realistic attitude and of comprehending the implications and consequences of his actions. On the other hand, he is severely handicapped in language development. Being unable to give adequate verbal expression to his wants and feelings, he is apt to express them through unsublimated physical actions and aggressions. His deficiency in motivation leads to the wasteful dissipation of mental energy in many directions. He is a victim of environmental distractions. He likes fun and hates concentration or contemplation. Being selfish and impatient, he will try to get what he wants in the easiest and shortest way which is usually unacceptable to society. His ambitions are largely hypothetical, as he does not sustain a consistent attitude toward work and long-range goals. He loses interest when frustrated and abandons his projects before they are completed. He resists the drab routines which make for orderliness and emotional security. His intelligence is misused on fighting those who attempt to supply him with the motive and directive energies necessary for successful adjustment. He lives the life of a parasite and resents it when not allowed to do so. These tendencies are made still more dangerous by his dilatory tactics in learning motor skills and by the frustrations resulting from general physical awkwardness.

The average delinquent girl in our group also has average intellectual endowment. She suffers to practically the same degree as does the boy, from a deficiency in the field of language. She excels the delinquent boy in motor efficiency, but in comparison with normal girls exhibits moderate retardation along this line. More often than the boys, she is handicapped by an unrealistic outlook on life. This lack of realism is related to offenses of a sexual nature. The boy fights, the girl submits. Both modes of adjustment occur without much regard for the outcome of their action. The delinquent girl lacks self-discipline, and the ability to suspend the realization of momentary desires for future gain.

The combination of deficiencies found in delinquent children favors rule by strong emotions rather than forethought. Delinquents are apt to live for the passing moment with little thought for the morrow.

The successful treatment of these adjustment difficulties and personality aberrations cannot be achieved by environmental reform alone. Deviant behavior precedes the appearance of delinquent acts and continues despite advantageous changes in social conditions. While parental rejection, poverty, neglect, and abuse cannot be ignored as contributing factors to making delinquents, they should be supplemented by intensive research in the neuro-physiology of the delinquent child and also his parents. Combined physical, mental, and social therapy will achieve better results in curbing crime than any one of the approaches alone.

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# THE PSYCHOLOGY DEPARTMENT OF THE GOVERNOR BACON HEALTH CENTER

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Ideally, clinical psychology today functions in three main areas: first, psychological examination and evaluation; second, psychotherapy (usually in consultation with, or under the supervision of, a medically trained psychiatrist); third, psychological research. The department here at the Governor Bacon Health Center is functioning in all three areas. At the present, distribution of time is weighted in favor of examination and evaluation. It is planned, in line with the Child Psychiatrist's current program, that we shall spend more time in psychotherapy with disturbed children in the future. Our present research is concerned with the development and evaluation of tests for the detection of brain injured children, and the development of tests that will measure motor efficiency more adequately. The department (consisting of one permanent psychologist, one part-time psychologist, and three psychological internes from the State Hospital) is an integral part of the overall diagnostic and therapeutic efforts of the institutional staff.

The psychology department may have cases referred to it from any of the general diagnostic categories of the institution (maladjusted children, crippled children, epileptic patients, and adult alcoholic patients). We work in the Child Guidance Unit as one part of the clinic team which consists of psychiatrists, social workers, and clinical psychologists. A close relation is maintained with the pediatrician and the education and recreation director. When individual or group psychotherapy is undertaken regular interviews with the child psychiatrist are scheduled to discuss methods and precautions to be considered in dealing with the case.

A large percentage of the work of the psychology department is concerned with personality diagnosis and evaluation. Cases are referred to psychology through the medium of the social service intake worker. Initially, great care is taken to evaluate the patient's native intellectual capacity and general personality structure. Psychologic findings are presented in staff meetings to be incorporated with the data of the psychiatric and physical examinations, and the social history.

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For diagnostic testing an appropriate battery of tests is given the patient. Although a battery of tests may prove to be time consuming, it is often essential for thorough study of a case. Fundamental to the test battery are the tests of intelligence and the tests of achievement in school subjects. Our most frequently used intelligence tests are the Jastak Patterns, the Wechsler-Bellevue Scale, the Wechsler Children's Scale and the Stanford-Binet. We find Jastak's Wide Range Achievement Test to be the most valuable for testing achievement in the school subjects, reading, spelling and arithmetic. From the intelligence and achievement test scores we derive a rating of the patient's potential intelligence, or, as Jastak has expressed it "— the level of maximum personality integration" (5). Due to a great extent to the brilliant work of Jastak, Rapaport, Wechsler and others, psychological examiners today are able to obtain from the intelligence examination not only an estimate of the native intellectual capacity of the patient, but also a considerable amount of information about his personality structure.

Other tests may be included in the battery as complements to the intelligence and achievement tests. A carefully selected battery of tests makes for more meaningful understanding of a personality. Evaluation of the general mental efficiency (in relation to potentiality) of a patient may be aided by the use of tests of mental efficiency. Memory and learning efficiency are likewise studied. Although the term "memory" is fraught with ambiguities, for us the "learning-memory" concept encompasses four general aspects. Briefly, the first is the *registration* or *impression* aspect. It is during this phase of the dynamic learning process that new material is impressed or registered in the mind, or brain, of the individual. Perceptual weakness, due to either inadequate volitional control of attention, or physiological disturbance, is, of course, destructive to registration. The second aspect of the learning process is the one of *retention*. Retentiveness of memory-traces, or engrams, both immediate or delayed, is also seemingly an organismic function with both physiological (4) and psychological bases (8). Thirdly, we have the process of *recall*. This aspect of memory is concerned with the ability to recall material that is retained somewhere in the mind, or, if one prefers, brain. Cameron considered this process under the term "reactivation." This includes, as well as recalling, "— recollecting and, in the widest possible sense, reacting in terms of an incident to which the organism had responded at some earlier time" (1). Fourthly, we include the process of *recognition*. This is partially explained by Cameron's definition of reactivation. Loosely, it may be considered as partial recall. Experiences, if directly confronting the individual, may be "recognized", but he may be unable to structure or recall these experiences unless perceptual experience is available to him.

Failures or distortions of content in these processes of learning in the learning-memory continuum offer diagnostic information. Frequently disorders of a predominantly organic nature, e. g. senile psychosis or Korsakoff's syndrome, exhibit failure at the impression stage (3). The content of the recall is subject to autistic distortion in certain types of schizophrenic reactions (9). At the present time we are confronted with many problems and unanswered questions in this general area. We feel, however, that further research in the dynamics of the learning and memory process will yield fruitful results.

Tests of concept formation are another useful tool in studying thought processes. In this type of test the subject is asked to discover the reason why certain objects (or various colored geometrical forms) are grouped in a pre-arranged manner by the examiner, or to group the materials himself, and then give the reason why they are grouped in this particular way. The individual with adequate adjustive ability can usually bring objects together, or categorize them as a group, according to general class-concepts, for example, categories like metal, wood, colors, tools, toys, etc. Study of disturbance of this aspect of the thought processes offers valuable information as to the nature of the personality disorder (2).

The so-called "projective techniques," including the Rorschach ink-blot test, and the Thematic apperception test (with its various modifications), are particularly valuable in obtaining information related to the patient's personality structure and thought content. Both of these tests are considered to be "projective" in the sense that an individual "projects" himself into his test responses, either in terms of *what* he perceives or associates to the stimulus, or the *manner* in which he responds. Rapaport in defining the "projective hypothesis" states "— every reaction of a subject is a reflection, or projection, of his private world" (7). Many other techniques, including measurement of "expressive movement," such as drawings, projective play, and handwriting, are loosely considered as projective techniques. It may well be a fact that responses to any type of psychological test manifest projections of the subject. However, the tests discussed in this category are those which are particularly sensitive to inner psychic states, needs, presses, interests, desires, fears, conflicts, and idiosyncratic perceptions. Visual stimuli, i. e., blots or pictures, are the most frequently used medium for eliciting projective material. This information is scored and interpreted by the examiner in an attempt to detect characteristic fantasies, and modes of thought and feeling.

Tests of perceptual-motor ability and motor efficiency are utilized to assess maturational development in these spheres. Psychological disturbance due to lesions or disequilibrium of the central nervous system may be manifest in the perceptual-motor tests. Also, in differentiating between true feeblemindedness and that type of verbal deficiency which sometimes simulates feeblemindedness (6), motor tests may be valuable. For educational and vocational placement a study of the subject's relative ability in the verbal and motor spheres of performance is essential.

Another group of tests which we have occasion to utilize are infant tests. The Gesell Development Schedules, which is an excellent test for infants and young children, evaluates the child's development level in the following four areas: motor, adaptive, language, and personal-social. Still another group of tests which we use with our adolescent and adult population is comprised of vocational interest, values, and aptitude tests.

The particular battery of tests selected for the subject is to a large extent a function of the clinical judgment of the examiner. As we have noted, the intelligence and achievement tests are given routinely. In choosing other tests the examiner considers, among other things, the age of the subject, what appears on the surface to be the general problem, reasons for the subject's being referred for study, and the data, or gaps in data, from the tests that have already been administered. This latter point, the results of tests already given, is often a crucial one in indicating the line further testing should take. If certain weak undifferentiated "signs" appear, follow-up study with relatively more sensitive tests is undertaken.

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## PARENTS COME TO THE MENTAL HYGIENE CLINIC

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Within recent years the newspapers, magazines, movies, television and public press have been pointing an accusing finger at the parents of emotionally disturbed children. They have been criticized as being wilfully and totally responsible for all their children's faults.

There is no doubt that there are some bad parents, or perhaps we should say inadequate parents, but to say that all parents of disturbed children are "bad" suggests that this is a conscious and wilful iniquity. This is in our experience a severe and rather malicious misconception. We will agree that there are, in many of these cases, inadequate parents but our experience has rarely shown they are bad parents. It has frequently been difficult to achieve the cooperation and understanding of some, but almost invariably, if a parent does understand the problem, that parent will be eager to accept help. We have indeed sometimes found that parents in seeking help for themselves will absorb the time set aside for their children. Thus it becomes essential for the clinic to first free the parent from anxieties and defenses which hinder his working wholeheartedly with the clinic. This is done through discussions that bring out a parents feeling toward the clinic referral, the schools and the child. It also involves a consideration of the parents' hopes and ambitions as well as fears for their children. The parent who has been denied certain opportunities in his early life may unwittingly press his child to achieve goals which he himself had sought unsuccessfully. As a result the child may resist the parents ideas in an effort to try to find himself.

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The role which the father plays in sharing the responsibilities and discipline of the child is an important part of the discussions. Sometimes this brings out a projection of the responsibility of the child's behavior on the other parent or even the projection onto the community or school.

Occasionally these feelings are justified, more often they are simply projections, but almost always they reveal the feelings of frustration that come from parents' inability to handle these sometimes complex problems. It is not the problem of the Clinic to place responsibility for a behavior problem in a child; it is the responsibility of the clinic to recognize defects in the environment and treat them accordingly. To do this calls for the assistance of both parents. It calls for their assuming responsibility for raising their children. It calls for the assistance of the clinic in helping them do so. The clinic does not try to point an accusing finger at a parent. To do so would be purposeless and useless. A parent needs to share the affection, fun and play of a child as well as the disciplining. Some parents, because of their own childhood, do not know how to play with their children. They may treat them as far younger children than they really are, or they may expect adult behavior from a child. Sometimes parents do not feel at ease in playing with their children and tease them to a point that is no longer fun for the child, thus injuring their relationship to their child. Such attitudes can be brought out and discussed, thus aiding the parent to see what he is doing to his child and how he can guide his own behavior accordingly so that he can expect from his child the responses he would like to see.

If a parent is inconsistent in his attitude toward his child or is unable to share his life with his child, the child may not be able to find his place in his home or be able to find a satisfactory relationship with his parents first. Later with other adults, as a result, he may feel very insecure. He may want to show this at home but not be able to do so, as he is taught he must obey at home. He has to show it somewhere. He may demonstrate it in his relationship to other adults or his friends. He may not be able to concentrate on his school work. He may demonstrate his insecurity by imaginary ills, or he may withdraw from contact with people. These are a few of the symptoms that teachers see in children that prompt them to refer a child to the clinic.

The child who is showing behavior problems in school, problems with which the teacher is unable to cope, often reflects in his behavior, the influence of his home. It therefore becomes important that the school seek the assistance of the parents in order properly to understand and evaluate the child's life outside the school room. If therapy is undertaken the parent is asked to bring the child to clinic each week. This latter arrangement serves the double purpose of insuring the child's attendance at the clinic and also creating a better relationship between the parent and child. There are a few parents who come to the clinic with real concern for their child's behavior, a willingness to accept responsibility for their behavior and a readiness to work with the clinic in trying to help the child back to normal healthy behavior. On the other hand, there are some parents, and parents are human beings, who show their anxiety on being informed of their children's difficulties by denying the existence of these problems. Frequently they become quite defensive, anxious and even hostile. They take this kind of information as an attempt on the part of school authorities to criticize their ability to raise their children. It is not surprising that parents do have these reactions. We are living in a "psychiatric era."

The clinic cannot perform miracles nor can it undo in a couple of interviews something that may have taken years to develop. But it can help children to a better adjustment in their environment. Those children that are referred to the clinic are not mental patients in the sense ordinarily implied. They are children who through no conscious fault of their own, or of their parents, or of the teachers have developed attitudes and behavior that prevents them from adjusting to their environment to the best of their ability. These attitudes and behavior patterns often can be corrected now through the help of the clinic so that the child is freed to develop into a normal, mature, well-balanced adult.

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## THE PARENT'S ROLE AT THE GOVERNOR BACON HEALTH CENTER

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The Governor Bacon Health Center is a therapeutic Center offering child guidance clinic service and resident treatment for children between the ages of four and sixteen who are showing emotional and behavioral problems. There are over two hundred children in residence at this time. For each of these there are parents or parent who must be actively participating in the plan of treatment for maximum success. Treatment is dependent upon the parent's interest, understanding and participation. The Center is child-centered but on the periphery are the parents who recognized their inability to provide a comfortable environment for their child and so have come for help to the Center.

The parent's role in the child's residential treatment presents a challenging area of work in the development of residential treatment. It is essential that the parents continue to have an active part in the child's treatment for in the last analysis, he is *their* child and will be returning to them. At all times we emphasize that residence at the Center is for an interim period. Another reason for the active participation of parents is the recognition that they, too, have played a part in the creation of the child's problems and unless they are actively concerned and willing to make some changes the child will face serious difficulties in effecting change in himself. Our clinical experience in the philosophy of the child guidance field has been of invaluable assistance in determining our direction, procedures, and practices. This experience has proven that the child needs the active participation of his parents as a force in recreating new and changing relationships. In a Child Guidance Clinic this is established by interviews with the parents and psychiatric social worker occurring simultaneously with the child's interviews with the therapist. But in residential treatment we are confronted with real separation as the parents physically relinquish the child to the Center for treatment. We do not feel that this separation essentially changes the need for parent participation. How then is it possible for the parent to be a part of the child's treatment when they are not together? What is the parent's role and how does this influence the child's treatment? When parents have reached the decision to use resident treatment they have moved so that they can permit a measure of separation to enter the parent-child relationships. The parent in seeking help does not wish to be told what plan of treatment to choose but is asking for an opportunity to work this out for himself. From the beginning some parents are clear about the type of service they are requesting but others need help in accepting this and in finding their own place. The social worker is faced with the complex problems of the parents participation and in strengthening the impulse which brought the parents for help.

The application process offers an opportunity for the parents to work through their emotions regarding the child's problems and the plan for residential treatment. This is important for only then are they free to participate in therapy and assume the direct relation that resident treatment requires. The application process consists of one or more interviews with parents without the child. During these interviews with the social worker the parents talk of the child's problems, mentioning contributing factors as they see them. In turn they learn from the social worker some understanding of the child's place in therapy.

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They receive information regarding the educational, recreational and religious training. From visits to the cottages and other facilities they see for themselves the environment in which therapy takes place. Later, the child is afforded an opportunity to actively participate in treatment plans when he and his parents visit the Center. Then the child talks with the therapist, visits the cottage in which he will live and explores the grounds observing the activities of children. The decision to use the Center by the parents and child is made following these visits.

On admission, the parents move further in their acceptance of responsibility by discussion of concrete requirements as arranging for payment as they are able, providing clothing and for regular visits to the child. At this point the parent's role in therapy is clarified by the psychiatric social worker.

The separation of child and parents is a focal point in therapy. Just as the child has ambivalent feelings centering in his leaving his family so are the parents filled with conflicts. Their desire for change on the part of the child is mixed with fears of what this change may bring. The first weeks in residence is critical for them. Parents sometimes find it difficult to sustain the decision they have made regarding this plan. The social worker must help the parents bear this physical separation and at the same time assist them to an understanding of the psychological unity which is beginning for them with their child. It is the case worker's responsibility to support the parent while working through the disturbing feelings stemming from the separation. Some parents, particularly those who have been too protective, are concerned that someone other than themselves is helping the child. They fear the competition; and, if these feelings become too strong they may threaten to withdraw the child. We meet this understandable threat at Governor Bacon Health Center by advising parents and children that those in charge of their daily living in the cottages are not taking the place of their own parent. We are eager to create, maintain, and strengthen family ties. It is common knowledge that the difficulties of almost all emotionally disturbed children originate in the parent-child relationship. Therefore, we start the child's re-adjustment by offering the simplest relationship — a friendly adult who cares for the child in the day-by-day living.

All during the residence the own parents share in the child's change — thus becoming part of the experience in the new self their child is creating.

They become familiar with the basis of treatment for the child in relationship with the therapist which permits the child to move through the troubling difficulties of deep concern to the parents and the cause of his difficulties and unhappiness. The structure of this process is defined in regular interviews with the therapist, augmented by group therapy.

The manner in which each parent participates is individual and distinct — there are no set standards. How the parents handle the various matters concerning the child are indices of the parents feelings and progress. It is the case worker's responsibility to offer help to the parents as they work through their feelings regarding the child and their own involvement in the child's problem. The case worker becomes the connecting link between parent and child and gives anchorage to the child's therapeutic experience.

The length of residential treatment is again an individual matter. Just as the child was dependent upon the parents for leaving home so is he dependent upon the parent's readiness in feeling for his returning to the family.

In order to bring parents into fuller understanding we have invited them to meet at the Center each month. Through discussion, films, and clinical demonstrations they will learn more of the meaning of behavior and their own important role in their child's development. The films used are provided by the Federation of Women's Clubs who have demonstrated their interest in the Center by this valuable educational project.

The approach of discharge sets in motion new feelings of fear and doubt for parents and child. Sometimes, we find the child eager to test himself while the parents are uncertain. It is important to understand these feelings of uncertainty which are expressed in many ways and to resolve the conflictual ones before the child's discharge. By that time we have tested the child through home visits which have increased in frequency and length as the child shows by his ability to handle the relationships and find them satisfying. Through objective tests and staff evaluation we have measured achievement and personality development. At the time of discharge we feel that the parent and child are able to stabilize their respective changes and the Center accepts responsibility for his leaving. At the Center we do not expect to change the children into perfect human beings. We can only try to bring out the best in them. We hope that they acquire some skill in the greatest art of all — to live socially useful and satisfying emotional lives. Most of all we try to help them make peace with themselves and one another.

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## THERAPY WITH A CHILD FROM A BROKEN HOME: A CASE STUDY

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The Governor Bacon Health Center has been set up to offer psychiatric care and treatment to emotionally disturbed children. Another function is to provide a spot for children who are awaiting foster-home care or temporary care when an emegency occurs in a family which temporarily makes it impossible for the parents to care for the children.

Mary was admitted to the Center together with her sister Jane and her brother Bobby because her mother was being evicted from her home. Relatives would give the mother and the baby shelter, but could not include the other three children.

Although the mother was asking for temporary care, there was some recognition on her part that Mary was emotionally disturbed. In the intake interview the mother brought out her intense hatred of her husband, who had deserted the family and removed himself from the state so he would not have to support her. The case history revealed that the family has never been a stable unit, with several desertions by the father and with the mother being totally inadequate to meet the emotional needs of her children.

Soon after admission, Mary was referred to this worker for intensive therapy because she was not getting along with her cottage counselor or her cottage mates.

The first interview revealed Mary as a tense, anxious, highstrung nine-year-old. We set up our interviews three times a week for forty-five minutes. Although of average intelligence, Mary was retarded in school and could not tell time. The worker drew the face of a clock and indicated where the hands would be at the beginning and the end of our time together. She was told she could talk about anything she wanted to talk about. Without looking at the therapist or giving any indication she was with her, Mary opened her mouth and began to tell of her hatred for her father. Her feelings continued to pour out for a half-hour. It was noted that many of her remarks were prefaced by, "My mother says . . ." By the second interview it was evident that Mary was feeling quite ambivalent toward her father, and in the third interview the worker ventured to help Mary clarify how she did feel about her father . This was done by stating that no one is ever totally bad; there is some good in everyone, and perhaps Mary felt that way about her father. She identifies closely with her mother, but maybe her mother doesn't always hate her father and maybe Mary likes her father a little bit. When she learned that she did not have to reject her father totally, Mary could relax a little and could keep and wear a gift her father had sent her.

---

*Social Worker, Governor Bacon Health Center.

Concurrent with the work with Mary went interviews with the mother focused on helping her understand how she had forced the mother-role on her little girl because of her own lack of strength and her ambivalence towards her husband.

There was a very real danger that because of the mother's inability to give her daughter real mother love, Mary would relate to the worker on this basis. The worker was aware of this and deliberately allowed the relationship to have many of the characteristics of a child-mother one because Mary was unable to grow until her reachings out for love and deep interest were satisfied. At the same time, the therapist could handle this relationship with her special training in disciplining her own feelings, and, with her work with the mother which the child was aware of, could keep the child related to the reality situation.

As the therapy hours progressed and the worker gained an understanding of the child, she was able to help the cottage counselor accept Mary as she was and start at that point to help her in her daily living in the cottage. For instance, one small and apparently insignificant element was the fact that Mary's mother is Italian, and although Mary is blonde and light in complexion, she has a high temper and reacts quickly and thoughtlessly to small disputes. When the cottage counselor learned that Mary's violent outbursts were relatively unimportant and that almost immediately afterward she would be sunny and happy, the counselor was better able to accept the tantrums for what they were. With Mary, the therapist tried to help her gain insight into what these outbursts did to others.

In the beginning Mary was intensely jealous of the worker and was disturbed when other children greeted the worker affectionately. It was apparent that Mary had never felt secure in her parents' love. There was evidence of sibling rivalry also. As the worker remained accepting of and warm to Mary, she began to have some trust in this relationship. Frequently she would bring her special girl friends to our sessions and offer to share her time, although she was obviously relieved to have her offer refused. This was in part a testing of the relationship and an attempt to retain control, but also showed some recognition of the worker's role in helping children other than herself.

As Mary became more aware of her own feelings and took on some beginning responsibility for her own actions, life in the cottage setting became happier for her and for her cottage counselor. When the warker prepared to end with Mary she put up a token resistence with some fear that ending might bring back her problems. However, she either skipped appointments altogether or appeared late for the last hours. This was pointed out to her and she agreed she felt she did not need the hours.

It has been evident that Mary has gained some insight into her problem and is more ready to seek help when she is disturbed. Recently her mother failed to visit her. She was again evicted from her house and for several weeks the children did not know where she was. Mary began bickering again with her cottage mates. She came to the therapist and said "You'll have to start seeing me again, because if you don't I'm going to blow my top." She could go on and verbalize her disturbance in terms of her mother's neglect and move from that into some acceptance of the situation.

Mary is still far from being a well-adjusted, emotionally stable youngster, but through what we may call relationship therapy, she is better able to live in peace and harmony with children her own age.

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## PSYCHOTHERAPY WITH AN AGGRESSIVE ADOLESCENT GIRL: A CASE STUDY

Mary Ella Robertson, M.S.W.,*

Delaware City, Del.

Therapists frequently treat adolescents because it is in the very nature of an adolescent to come into conflict with society. Adolescents undergo a period of storm and stress, a time of transition from childhood into adulthood. This period of life is characterized by extremes and sudden changes in mood and temperament, and like all change, it is slow and difficult.

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*Case Worker, Governor Bacon Health Center.

Parents are better prepared for the physical changes of puberty than they are for the psychological changes. Parents are frequently unable to accept the full impact of the ambivalent, erotic behavior directed in disguised ways towards themselves, in addition to their distrust of their own impulses and feelings as well as their children's. This failure they (the children) are unable to understand and support, and this adds new burdens to the youth.

In the treatment process, diagnosis is of primary importance because the therapist must be prepared to handle shifting and mixed feelings and behavior. It is sometimes difficult to distinguish the adolescent whose behavior is indicative of symptom formation from one who has begun to act out his problem on society. Anxiety and panic states are easily aroused, and the youth may not be able to bear the demands of insight.

The core of treatment lies in the therapeutic relationship and the use that the adolescent makes of it. It is within this framework that the worker helps him to understand and accept himself. The diagnosis for this girl was primary behavior disorder, with conduct disturbance.

Anna is a 14-year-old Negro girl who was referred to the Governor Bacon Health Center by a child-placement agency because she was aggressive, incorrigible, and unmanageable at home. This girl was born out of wedlock and was always rejected and frustrated by her mother. At the age of two, the Family Court assumed her custody after neglect charges were brought against the mother. She was placed in a foster home, where she was a good-natured, happy child who demanded attention and affection. At the age of eleven, she was returned to the mother. There was intense conflict in the home; the mother was extremely abusive to Anna, who sought the protection of the Family Court for herself.

The school experience was a very frustrating one for Anna, who was known as a bad girl because of her extremely aggressive behavior. She had few friends because of her difficulty in relating. Finally Anna's behavior pattern turned into the area of sexual delinquency. At this time she was admitted for treatment at the Governor Bacon Health Center.

When first seen, Anna appeared to be discouraged, forlorn, solemn, and unhappy, and denied that she had any participation in coming here. Her first preoccupation was with the maternal figure. There was considerable ambivalence expressed, and at one time she stated that if she had not entered the Center she would have seriously hurt her mother. This aggressive threat obviously was stated as a desire to rid herself of the mother who had prevented gratification of many wishes.

In the cottage Ann was so determined to be accepted by the other girls that she only succeeded in annoying them. She then became quite daring, bold, and contemptuous of all authority. She gave the appearance of great strength and resourcefulness. She pretended to fear nothing, and frequently stated to the therapist that "nothing can hurt me, I don't care about anything."

During the early phase of therapy, she was resistive and related only superficially. She was afraid of any yielding, since it involves giving in and cooperation. She was extremely fearful of a more gentle, positive type of feeling expression, as it involved sharing and being related to another person on the basis of growth rather than control.

In therapy Anna frequently told the worker that she knew her duties, and made incessant demands for privileges. Within the therapeutic relationship, it was necessary to clarify the worker's duties and area of responsibility. Anna was unable to accept this and she reacted by threatening the worker. Shortly after coming to the Center, she ran away (part of her bravado act). In subsequent therapy sessions, she has repeatedly discussed how fearful she was, but would not return because she must "save face."

The therapist maintained an attitude of permissiveness and understanding, and Anna began to use the relationship to project her feelings. She once said that she was tired of coming to see the therapist; there were other things to do. The therapist recognized her need to move fast and get things done in a hurry. This afforded an opportunity to offer some insight into some of her aggressive behavior.

At this point therapy became blocked because Anna saw the worker as being too good and understanding. A great deal of anxiety was aroused, and the fear of being trapped stimulated more aggression. Therapist constructively set up limits for her. Anna now began to move into identification with the worker. She had constantly indicated the need to identify with someone. She appeared one day with her hair combed in the style of the worker's hair, and she was wearing a bright, red lipstick. She did not mention her hair style, but frequently referred to the lipstick: "It's the same shade as yours."

Therapy with the mother has been most unproductive. She is not cooperative, because she cannot relate. This mother has many needs, and is so erotic and confused within herself that it will be impossible to rehabilitate Anna in this home unless the mother receives individual psychotherapy herself.

During the last therapeutic session worker stimulated Anna to discuss her conflicts and anxieties. Hopefully, these will be channeled into constructive, socially acceptable means of expression.

Because opportunities for growth have been impaired, she was encouraged to develop her talents and skills. Group therapy has been recommended, as it is felt that she can use it to achieve in association with others. She may profit by this experience, which affords a means of integration and assimilation. Individual psychotherapy will be continued.

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## BOOK REVIEWS

Attorneys' Text Book of Medicine. By Roscoe N. Gray, M.D., Surgical Director, Aetna Casualty and Surety Company, Hartford, Connecticut. Third Edition. 2 Vol. Pp. 2160, in Loose-leaf Binders. Price $35.00. Albany, New York: Matthew Bender & Company, 1949.

The title of this work is descriptive, but gives no idea of the completeness of the work or its availability through a colossal index, (17000 items). Written for lawyers by a doctor whose experience with 700 affiliated attorneys has given him complete understanding of what the lawyer should know about anatomy, personal injury, medicine, surgery, disease as complicating injury, nervous and mental disorders, evaluations of disabilities, costs of all types of claims, and how such information should be presented for the best legal use. The scientific text is in terms that any attorney can readily understand. This book is not intended to replace the physician consultant to the attorney, but it does give the attorney something that he can study at leisure. Ample references to the original medical literature are included in the text. Questions and points to be covered in the investigation of claims are given at the end of each section, constituting an invaluable check-list for the attorney.

While the specialist in medicine and surgery can find a paragraph here or there with which he might not fully agree, and while some of the ethics outlined is that of the corporation or insurance outlook rather than that of the medical profession, there is so little to quibble about in this work that we unhesitatingly recommend it as the finest work of its type in the English language.

---

Saw Ge-Mah (Medicine Man). By Louis J. Gariepy, M.D. Pp. 326. Cloth. Price, $3.00. St. Paul, Minnesota: Northland Press, 1950.

This novel takes its name from the Ottawa Indian word meaning Medicine Man, a title they rarely bestow upon a white man. The novel gives the history of why and how the hero receives this title and is replete with much medical lore concerning medical education, specialization, group practice, public service, and medical ethics. The author has directed that the proceeds of this book shall go to a Foundation and Mission School for his Indian friends. The novel is interesting and is good vacation reading.

---

Normal Values in Clinical Medicine. By F. William Sunderman, M.D., Ph.D., Professor of Experimental Medicine and Clinical Pathology, University Texas Postgraduate School of Medicine; and Frederick Boerner, V.M.D., Late Associate Professor of Clinical Bacteriology, Graduate School of Medicine, University of Pennsylvania. Pp. 845, with 237 figures and 413 tables. Price, cloth $14.00. Philadelphia, W. B. Saunders Company, 1949.

Normal values in many fields of clinical medicine are presented here, including the cardio-vascular system, hematology, blood and body fluids, respiration, digestion, urology, gynecology, obstetrics, orthopedics, dermatology, ophthalmology, otology, rhinology, endocrinology, metabolism, teeth and saliva, and miscellaneous data. The work represents 44 corroborators, who are leaders in their fields. The illustrations are excellent and the index quite ample. The book should be of value to all laboratory personnel and those clinicians who wish to have at their finger tips complete data of this sort.

We do recommend the book heartily.

---

Proctology in General Practice. By J. Peerman Nesselrod, M. D., Associate in Surgery, Northwestern University Medical School; Pp. 276, with 64 figures. Price, cloth, $6.00. Philadelphia: W. B. Saunders Company, 1950.

The title of this book is descriptive of its intent and indicates its content. The book is aimed at the general practitioner and accomplishes its purpose, and is especially commended for the insistence of the author on more careful and complete examinations of the lower bowel as a routine. The illustrations are adequate, and those conditions are described which are suitable for office practice. The book can be recommended.

---

Medical Gynecology. By James C. Janney, M.D., Associate Professor of Gynecology, Boston University, 2nd Edition. Pp. 454, with 108 figures. Price, cloth, $6.50. Philadelphia: W. B. Saunders Company, 1950.

The second edition of Janney's books, five years after the first, is welcome. The work is purely medical and does not include any operative procedures. Stress is laid on office and home procedures and are more than adequately discussed. The work includes a chapter on social medical problems in gynecology which is valuable. The book should be of value to all physicians, because sooner or later every practitioner comes face to face with the problems of medical gynecology.

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Urological Surgery. By Austin I. Dodson, M.D., Professor of Urology, Medical College of Virginia. Second Edition. Pp. 855, with 645 Illustrations. Cloth. Price, $13.50. St. Louis: C. B. Mosby Company, 1950.

This book with the help of twelve contributors, is a text of urological surgery, as the name implies, and not a text book of urology. Most of the usual operative procedures are described, including some techniques that the general practitioner will utilize, although the book is not intended for their special benefit. Numerous illustrations are beautifully done and illuminate the text admirably.

The book is probably the best one volume text on urological surgery available.

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Current Therapy 1950—Latest Approved Methods of Treatment for the Practicing Physician. Editor: Howard F. Conn, M.D. Consulting Editors: M. Edward Davis, Vincent J. Derbes, Garfield G. Duncan, Hugh J. Jewett, William J. Kerr, Perrin H. Long, H. Houston Merritt, Paul A. O'Leary, Walter L. Palmer, Hobart A. Reimann, Cyrus C. Sturgis, Robert H. Williams. Pp. 736. Price, cloth, $10.00. Philadelphia: W. B. Saunders Company, 1950.

This book, the work of 269 selected authorities, gives the best treatment available today in the field of general medicine. The sections are for the most part briefly written but are meaty, a point that the busy practitioner will appreciate; besides, the page is quite large and it is divided into two columns making reading that much easier. There are no illustrations, but numerous tables. The index covers the work adequately.

For a quick review in Therapy, we know of no better book.

---

Proceedings of the First Clinical ACTH Conference. Edited by John R. Moter, M.D., Medical Director, Dorudun Laboratories, with 178 Contributors. Pp 624, with 414 Illustrations. Cloth. Price $5.00. Philadelphia: Blakiston Company, 1950.

As the title indicates, this material represents a conference in Chicago on October 21 and 22, 1949, sponsored by Armour and Company, producers of ACTH. The subject material being new, the contents of this volume will become a basic reference in the years to come. Incidently, the field is rapidly expanding, and while 613 cases are summarized here, it will not be long before a supplementary volume will have to be issued to keep the clinician up to date.

All those who are interested in ACTH and Cortisone will want this book: And who isn't? We wish it had an index.

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# DELAWARE STATE MEDICAL JOURNAL

**Official Organ of the Medical Society of Delaware**
INCORPORATED 1789

**VOLUME 22**
**NUMBER 9**

**SEPTEMBER, 1950**

**Per Copy, 50c**
**Per Year, $4.00**

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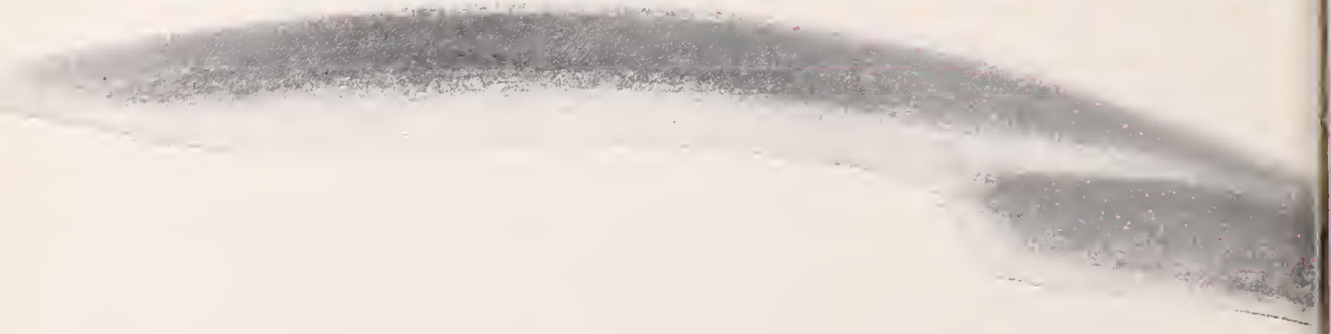

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# DELAWARE STATE MEDICAL JOURNAL

*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

VOLUME 22
NUMBER 9

SEPTEMBER, 1950

Per Copy, 50c
Per Year, $4.00

## THE CANCER PROGRAM OF THE STATE BOARD OF HEALTH

### Report No. 4

William H. Bandy, M. D.,[*]
Dover, Del.

In this, the 4th annual report, an effort will be made to state the activities of this Division during the past year, and to acquaint the medical profession with our plans for the coming year.

Reporting of neoplasms has continued in a satisfactory manner. The practicing physician is to be congatulated. The appreciation of each member of this office is great. With each passing year these records become more valuable.

Comparable tables for malignant lesions are presented along the same lines as those previously published (1&2). Hodgkin's disease and Leukemia are included in all tables.

### TABLE 1
### Cancer Incidence of the White Population by Age, Sex and Site, Delaware 1949

| SITE | SEX | ALL AGES | -9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | AGE UNKNOWN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL SITES | M | 296 | 3 | 3 | 3 | 8 | 38 | 61 | 86 | 59 | 18 | 3 | 14 |
|  | F | 353 | 2 | 0 | 11 | 29 | 74 | 75 | 73 | 51 | 22 | 1 | 15 |
| BUCCAL CAVITY AND PHARYNX | M | 43 | 0 | 0 | 0 | 2 | 5 | 9 | 11 | 9 | 6 | 0 | 1 |
|  | F | 10 | 0 | 0 | 0 | 0 | 3 | 2 | 2 | 3 | 0 | 0 | 0 |
| DIGESTIVE SYSTEM AND PERITONEUM | M | 91 | 1 | 0 | 0 | 2 | 9 | 23 | 32 | 19 | 3 | 1 | 1 |
|  | F | 55 | 0 | 0 | 0 | 0 | 8 | 15 | 16 | 14 | 1 | 0 | 1 |
| RESPIRATORY SYSTEM | M | 27 | 0 | 0 | 0 | 2 | 6 | 3 | 9 | 4 | 1 | 0 | 2 |
|  | F | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 |
| UTERUS | F | 87 | 0 | 0 | 6 | 14 | 29 | 16 | 13 | 3 | 3 | 0 | 3 |
| OTHER GENITALIA | F | 19 | 0 | 0 | 1 | 0 | 6 | 5 | 4 | 3 | 0 | 0 | 0 |
| BREAST | F | 72 | 0 | 0 | 0 | 10 | 14 | 15 | 18 | 8 | 4 | 1 | 2 |
| GENITAL ORGANS | M | 27 | 0 | 0 | 0 | 1 | 1 | 1 | 5 | 14 | 3 | 0 | 2 |
| URINARY SYSTEM | M | 17 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 2 | 2 | 0 | 0 |
|  | F | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 0 | 0 | 0 |
| SKIN | M | 50 | 1 | 0 | 1 | 0 | 12 | 9 | 13 | 8 | 3 | 1 | 2 |
|  | F | 55 | 0 | 0 | 1 | 1 | 7 | 11 | 7 | 14 | 10 | 0 | 4 |
| ALL OTHER SITES | M | 41 | 1 | 3 | 2 | 1 | 5 | 9 | 10 | 3 | 0 | 1 | 6 |
|  | F | 42 | 2 | 0 | 3 | 4 | 5 | 6 | 9 | 3 | 4 | 0 | 5 |

Source: Division of Cancer Control, State Board of Health, Delaware

### TABLE 2
### Cancer Incidence by Site, Color and Region Delaware 1949

| SITE | SEX | Delaware |  | Sussex |  | Kent |  | New Castle excluding Wilmington |  | Wilmington |  | % of All White Cases |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | White | Col. | White | Col. | White | Col. | White | Col. | White | Col. | Del. | U. S.[*] |
| ALL SITES | M | 296 | 12 | 37 | 0 | 41 | 0 | 78 | 5 | 140 | 7 | 100.0 | 100.0 |
|  | F | 353 | 28 | 61 | 3 | 49 | 6 | 74 | 6 | 169 | 13 | 100.0 | 100.0 |
| BUCCAL CAVITY AND PHARYNX | M | 43 | 1 | 6 | 0 | 9 | 0 | 8 | 1 | 20 | 0 | 14.5 | 10.6 |
|  | F | 10 | 1 | 3 | 0 | 2 | 0 | 3 | 1 | 2 | 0 | 2.8 | 2.0 |
| DIGESTIVE SYSTEM AND PERITONEUM | M | 91 | 5 | 10 | 0 | 12 | 0 | 18 | 1 | 51 | 4 | 30.7 | 36.4 |
|  | F | 55 | 3 | 5 | 1 | 9 | 0 | 7 | 1 | 34 | 1 | 15.5 | 22.9 |
| RESPIRATORY SYSTEM | M | 27 | 3 | 3 | 0 | 3 | 0 | 4 | 1 | 17 | 2 | 9.1 | 8.0 |
|  | F | 6 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 2 | 1.7 | 1.5 |
| UTERUS | F | 87 | 15 | 20 | 2 | 10 | 3 | 19 | 3 | 38 | 7 | 24.6 | 21.7 |
| OTHER GENITALIA | F | 19 | 3 | 3 | 0 | 0 | 1 | 4 | 0 | 12 | 2 | 5.4 | 5.7 |
| BREAST | F | 72 | 3 | 11 | 0 | 13 | 2 | 18 | 1 | 30 | 0 | 20.4 | 23.7 |
| GENITAL ORGANS | M | 27 | 2 | 4 | 0 | 5 | 0 | 7 | 2 | 11 | 0 | 9.1 | 11.6 |
| URINARY SYSTEM | M | 17 | 0 | 2 | 0 | 2 | 0 | 6 | 0 | 7 | 0 | 5.7 | 7.2 |
|  | F | 7 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 1 | 2.0 | 3.4 |
| SKIN | M | 50 | 0 | 5 | 0 | 4 | 0 | 22 | 0 | 19 | 0 | 16.9 | 17.4 |
|  | F | 55 | 0 | 15 | 0 | 8 | 0 | 11 | 0 | 21 | 0 | 15.6 | 11.4 |
| ALL OTHER SITES | M | 41 | 1 | 7 | 0 | 6 | 0 | 13 | 0 | 15 | 1 | 13.9 | 9.4 |
|  | F | 42 | 0 | 2 | 0 | 7 | 0 | 8 | 0 | 25 | 0 | 11.9 | 7.7 |

[*] Based on 10 urban areas of the United States, 1937-1939
Source: Division of Cancer Control, State Board of Health, Delaware

---

[*] Acting Director, Division of Cancer Control, Delaware State Board of Health, Dover.

## TABLE 3
## Cancer Incidence by Age, Sex, Color and Region
## Delaware 1949

| AGE AND SEX | | Delaware | | Sussex | | Kent | | New Castle excluding Wilmington | | Wilmington | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | White | Col. | White | Col. | White | Col. | White | Col. | White | Col. |
| ALL AGES | M | 296 | 12 | 37 | 0 | 41 | 0 | 78 | 5 | 140 | 7 |
| | F | 353 | 28 | 61 | 3 | 49 | 6 | 74 | 6 | 169 | 13 |
| – 9 | M | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| | F | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 – 19 | M | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| | F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 – 29 | M | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| | F | 11 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 5 | 0 |
| 30 – 39 | M | 8 | 1 | 2 | 0 | 2 | 0 | 2 | 0 | 2 | 1 |
| | F | 29 | 3 | 6 | 1 | 3 | 0 | 9 | 1 | 11 | 1 |
| 40 – 49 | M | 38 | 4 | 8 | 0 | 2 | 0 | 10 | 2 | 18 | 2 |
| | F | 74 | 9 | 13 | 1 | 10 | 1 | 16 | 1 | 35 | 6 |
| 50 – 59 | M | 61 | 4 | 4 | 0 | 5 | 0 | 14 | 0 | 38 | 4 |
| | F | 75 | 8 | 14 | 1 | 6 | 3 | 15 | 2 | 40 | 2 |
| 60 – 69 | M | 86 | 0 | 11 | 0 | 14 | 0 | 23 | 0 | 38 | 0 |
| | F | 73 | 2 | 11 | 0 | 14 | 0 | 12 | 0 | 36 | 0 |
| 70 – 79 | M | 59 | 3 | 7 | 0 | 9 | 0 | 15 | 3 | 28 | 0 |
| | F | 51 | 1 | 8 | 0 | 9 | 0 | 9 | 0 | 25 | 1 |
| 80 – 89 | M | 18 | 0 | 0 | 0 | 4 | 0 | 7 | 0 | 7 | 0 |
| | F | 22 | 1 | 3 | 0 | 3 | 0 | 7 | 1 | 9 | 0 |
| 90 – 99 | M | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| | F | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Age Unknown | M | 14 | 0 | 4 | 0 | 1 | 0 | 2 | 0 | 7 | 0 |
| | F | 15 | 3 | 1 | 0 | 3 | 0 | 3 | 1 | 8 | 2 |

Source: Division of Cancer Control,
State Board of Health, Delaware

Every two months during the year "The Cancer Bulletin, Delaware Edition" has been mailed to every physician on our mailing list. "Tumor Topics" a resume of Cancer Bulletin Articles prepared in book form and "dedicated to the premise that every doctor's office should be a cancer detection center" was also mailed to all physicians and dentists. If we have omitted any physician from our mailing list we would appreciate a card from him.

A few changes have taken place in the office. In August 1949, Dr. Spies resigned as Director to accept the position of State Health Officer of Utah. The author assumed the acting directorship April 1, 1950 and shortly thereafter the office was moved from Marshallton to the present quarters at Governors Avenue and Division Street in Dover.

Follow up service under the guidance of our special nurse, and aided by the general nursing staff of the State Board of Health is conducted only by the consent of, and in cooperation with, the physician responsible for the patient. It is hoped that physicians will use the service even more often in the future.

During the coming year this office will endeavor to be of more service to the practicing physician. Realizing that in the present state of medical knowledge the successful treatment of cancer rests on: 1. early case finding, 2. accurate diagnosis and 3. prompt treatment, the following constitutes our new efforts along these lines: 1) Mobile Cancer Unit, 2) Provisions for Pathological Examination of Biopsy specimens, 3) Procurement of film on self examination of breast.

### 1) Mobile Cancer Detection Unit

At this time a Mobile Detection Unit has been secured by the State Board of Health. This is so constructed that it can also be used as a multiphasic screening unit so popular in other parts of the country.

The primary purpose of this Mobile Unit is, of course, to provide facilities for cancer detection where facilities are not now readily available. Of even more importance, the unit will help persons to establish the practice of regular physical examinations by their personal physician.

The examinees will presumably be healthy females over 35 years of age. The clinical records will be similar to those now used by Detection Centers of the American Cancer Society.

The examinations will be a screening examination of the five accessible sites as is usually done in established Detection Centers. 1) Skin, 2) Buccal cavity, 3) Breasts, 4) Pelvis, and 5) Rectum. Cervical smears according to the Papanicolaou technic will be collected. Any positive or suspicious findings will be reported in writing to the patient's private physician.

It is planned to have this unit in operation by the time this goes to press.

### 2) Provisions for Pathological Examinations of Biopsy Specimens

Provisions are under way to set up a biopsy service. Containers will be sent to each practicing physician. These containers can be mailed to the Wilmington Health Unit where they will in turn be taken to one of the pathologists for processing and microscopic examination. Those patients who are financially able will pay for the pathologist's service. For the patient who is unable to pay, the State Board of Health will pick up the check. In any case the mailing containers will be furnished by the State Board of Health through its local unit. The question as to whether the patient can or cannot pay is decided by the private physician. We hope that this will be a worthwhile project, especially to those physicians far away from pathological laboratories.

It is hoped that in the future microscopic examination of smears stained with Papanicoloau stain may be included in this project.

### Procurement of film: Breast Self Examination

Since nine out of ten breast cancers are discovered by the women themselves[3], it seems advisable to instruct women in regular thorough self breast examinations. The consensus of opinion of those viewing this new film is that it provides the women of this country with a method by which they can minimize breast cancer as one of their personal problems.[4] With this in mind the film was purchased, and it is hoped that shortly it will be shown to each Medical Society and then to the public. It is planned to add more material of this type as it is published.

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## CARDIOVASCULAR DISEASE PROGRAM

George F. Campana, M. D., M. P. H.,*
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Cardiovascular disease tops the list of leading causes of death in Delaware as in every other state in the Union. In 1948 there were 637,679 persons who died of cardiovascular diseases in the United States. This figure represents 44% of the total number of deaths in that year. Correspondingly in Delaware there were 1177 deaths due to cardiovascular diseases in 1948 or 34.1% of the total number of deaths. The white deaths totalled 1008, (mortality rate of 402.5 per 100,000 population). The colored deaths totaled 169, (mortality rate of 437.5 per 100,000 population.) Morbidity rates are not available since cardiovascular diseases are not generally reported. There are, however, an estimated 9,000,000 people in the United States affected with cardiovascular diseases. Special studies done with school children indicate that one per cent of them are suffering from heart disease. In New York City studies on garment workers have uncovered two per cent with heart disease while life insurance figures reveal that approximately 2.0 to 2.5% of the applicants for life insurance policies are rejected because of heart disease.

From the Public Health Report for June 30, 1950, (Statistical Study of Heart Disease) there was found an association of heart disease mortality with certain periods of life.

Congenital heart disease deaths occur mainly under five years of age; valvular heart disease mortality mainly from five to thirty-five years; deaths from diseases of the coronary arteries from thirty-five to sixty-five years; deaths from diseases of the myocardium after age sixty-five. Acute rheumatic fever in second position from five to nineteen while deaths from acute endocarditis are found in young adulthood and those from syphilitic heart disease in middle adult ages.

Although the mortality due to cardiovascular disease is appalling it should be stated that:

1. Most of the deaths occur in the older age groups. Since 1900 the life expectancy has

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been extended from an average of approximately fifty to seventy years. Therefore, an increase of heart disease deaths is a foredrawn conclusion since we have a greater number of older people where deaths due to heart disease are most apt to occur.

2. The recent reclassification of the international lists of causes of deaths has placed deaths under heart disease which formally were attributed to other causes.

3. Better knowledge and treatment of conditions in early life have made many people live to a ripe old age where heart disease predominates.

4. Regular health examinations uncovering more cardiac conditions through the utilization of X-ray, fluoroscope, electrocardiograph, "Flicker Photometer" and other laboratory aids.

In the light of the foregoing statements it may be concluded that the increased cardiovascular mortality may be apparent rather than real. Nevertheless, cardiovascular diseases are a major problem and are receiving increased attention.

On June 16, 1948, the eightieth Congress passed the National Heart Act and appropriated the sum of $3,144,088 for research in cardiovascular diseases. Soon after this the United States Public Health Service set up pilot heart disease programs for the purpose of determining the best instruments which might be used to detect heart disease and also the most suitable administrative procedures to be used in cardiac detection .programs These studies are still underway. The Heart Act of 1948 together with the increased interest shown by the U.S.P.H. Service in the prevention and control of heart diseases have stimulated the states to intensified action. In Delaware the State Medical Association has joined forces with the newly established State Health Association and the State Board of Health in a program for the prevention and detection of cardiovascular diseases. The first step taken by this trio was a survey to determine the extent of the problem and also to find out what facilities there were to cope with heart disease. It was then decided to set up a program which would be one of education, prevention and case finding.

Education of the public will be the function of the entire trio. The State Medical Society through its county societies and its entire membership is no doubt the most important figure in health education whether it be for heart disease or any other disease. It is only the physician who sees the patients year in and year out who can warn both patient and family regarding heart disease. The Heart Committee of the Delaware Medical Society has also launched a program of education on heart diseases for the profession. An institute on heart has already been held at which no less a cardiologist than Dr. White of Boston was a speaker. The Medical profession of Delaware is keeping abreast of the times in heart disease. Theirs is the greatest share in the State Heart Disease control program. The State Board of Health can only hope to supplement their labors in some small measure.

The Delaware Heart Association, too, will continue to educate the public. Its funds have been used to some extent in the preparation and distribution of educational materials. The establishment of library facilities for physicians is contemplated. The State Board of Health is also participating in the educational program. A pamphlet, "Know Your Heart," has been prepared for distribution by the State Board of Health in cooperation with the Heart Committee of the Delaware Medical Society and the Delaware Heart Association. A pamphlet on low salt diets has also been prepared by the State Board of Health and will soon be ready for general distribution. The director of the program is preparing an in-service training course for members of the nursing and medical staff. Talks, newspaper articles, posters, and radio will play their part in the heart disease control educational program.

The prevention part of the program is again the special assignment of the medical profession. The medical practitioner diagnoses diseases. It is his particular job, therefore, to:

1. Detect, prevent and control communicable and infectious diseases, placing particular emphasis on those leaving cardiac residuals, such as syphilis and diphtheria.

2. Combat focal infections in teeth, tonsils, sinuses, etc.

3. Combat rheumatic fever and chorea.

4. Treat both obesity and malnutrition.

5. Keep close watch for poisoning by such heavy metals as arsenic, bismuth and mercury. This is the particular responsibility of the industrial physician.

6. Control diabetes and gout; check athletes carefully.

7. Check carefully the pregnant women.

8. Keep on the lookout for thyroid conditions that may affect the heart.

9. Watch for mental anxiety and all other conditions, use of drugs included, which may lead to the development of heart conditions.

10. Prevent measles or other infectious diseases during first three months of pregnancy. The Board of Health will assist in the preventive aspects of the program by alerting its clinic physicians and nurses. Physicians in well baby conferences and schools will search out any conditions which may be the forerunners of heart disease. The detection of heart disease (case finding) as before is the special job of the practicing physician. The Board of Health, too, will launch its campaign in this regard. It will attempt to uncover cases: 1. in school examinations; 2. in well baby conferences, prenatal and postnatal clinics; 3. through its nutritional services; 4. through its vital statistics division by carefully checking birth certificates for possible congenital heart disease; 5, by checking and follow-up of infants born of mothers who have contracted measles or other infectious diseases during the first three months of pregnancy; 6. through its mobile tuberculosis x-ray services (all x-rays will be re-read by a competent roentgenologist for possible heart disease;) 7. through the mobile cancer unit examinations; 8. through examination for diabetes, etc.

Whenever possible in the Board of Health clinics and on mobile units the public health physician will attempt to uncover any disease from which an individual may be suffering. Multiphasic examinations will be emphasized at all times.

The Board of Health at this time is contemplating establishment of a heart disease detection clinic most probably somewhere in the southern part of the state. The detection of heart disease in the entire population being a tremendous job, it is planned in the beginning to limit examinations to the age group 5-15. This age group will be broadened if circumstances warrent. Also, cases if referred specifically by physicians, no matter what age, will be accepted for study. Board of Health facilities already existing will be utilized. This will keep the clinic overhead down to a minimum. A budget of perhaps $15,000 will be needed the first year. It is hoped to employ a cardiologist on a part-time or per session basis. Probably a one-day session per month will suffice at the beginning of the program. The program as outlined has been discussed with the Heart Committee of the Delaware Medical Society. The aproval of the Committee will be required before the program is actually started. Any definite or suspicious case of heart disease found, whether in the cardiac detection clinic or other Board of Health facility, will be referred to their family physician. A follow-up service will be available to the physicians. A specially trained social service worker will be employed. No follow-up of a private case will be undertaken unless requested by the family physician. Follow-up will be effected first by mail and later by personal visit. Cases needing special care will be referred whenever possible to the proper institution. The Governor Bacon Health Center is now housing and caring for nine rheumatic heart disease patients. A service such as this might be extended to include not only a greater number of rheumatic heart disease cases but also other types of heart diseases. There are some who even advocate the establishment of special hospitals for cardiac disease cases. This might be advisable if a sufficient number of cardiac cases were found in Delaware.

The answer to the problem of cardiovascular diseases in Delaware might be a hospital for chronic diseases. Surely a chronic cardiac needs just as much care as a chronic mental disease case or a tuberculosis patient. In such an institution cases would receive thorough study and proper medication, and care could more readily be given. Rehabilitation of the patient would begin in the institution and be completed in the home if and when discharged. His mental outlook on life could more readily be observed and remedies applied. In addition, his home surroundings could be better studied and his economic condition ascertained. Everything could more readily be done to return the patient to a useful and happy life with ultimate saving of large sums of money both to the individual and the State.

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## IS CONGENITAL SYPHILIS A PROBLEM IN DELAWARE?

WINDER L. PORTER, M. D., P. M. H.,*
Dover, Del.

Intense efforts to reduce the incidence of venereal disease have been conducted in Delaware for a decade and a half. The last five of these years have brought continued revolution and extreme progress in the execution of the treatment phase as new and better forms of penicillin have been developed. Extension of rapid treatment schemes has been met with continued reduction in the number of new cases encountered and the percentage return in case-finding drives has dwindled materially.

However, the number of new cases of congenital syphilis reported has hovered near the same figure for the past several years. This parallels the reports from the country as a whole and has led the U. S. Public Health Service to place congenital syphilis as a target for special action to the extent of its being declared the foremost problem in venereal disease control today. This is inconsistent with the demonstration of the extreme effectiveness of penicillin in preventing congenital infection even when treatment of the mother has not been administered until late in pregnancy. Neither does it harmonize with the personal reactions of many in the field who have not actually analyzed the statistics but who mentally review the composition of their case loads over the past several years.

Because the Division of Preventable Diseases of the Delaware State Board of Health also feels that the figures do not portray the true situation, it is conducting an investigation which will survey all cases of congenital syphilis encountered in the past year and a half regardless of when the diagnosis was made, and which will include any new cases reported henceforth. Clinics and physicians reporting cases will be asked to complete a form giving the age of the patient, the date of the diagnosis, the circumstances which led to his discovery, and a brief summation of treatment of the mother prior to birth of the child. Concomitantly, there is being launched an intensive program aimed at discovery of possible unknown cases, with chief emphasis on examination of all children born to mothers known to have had syphilis prior to the birth of the particular child regardless of what treatment the mother may have had, and the examination of siblings of all cases of syphilis among children and adolescents. Even without accumulation of sufficient data to have statistical value, certain observations already justify mention.

Of eight cases of congenital syphilis reported in the current case load at one clinic, the youngest is eight years old, while the others range up to 34 years of age. These then represent failures of previous discovery efforts and rediscovery of previously known cases, rather than failures of present treatment methods.

Congenital syphilis is being discovered in patients already known and who were thought to have acquired syphilis until failure to make the expected response to treatment led to critical reexamination.

There is a tendency to underestimate the incidence of acquired syphilis in the very young. This is offset to some extent by the tendency to consider most infections in the mature individual as acquired.

There continues to be confusion in the interpretation of serologic tests in the infant born of a syphilitic mother where there is passive transfer of reagin. Diagnosis of infection in the child is often made prematurely and without warrant. Likewise there is failure to appreciate that intercurrent infection and the common immunization procedures may cause a temporary exhibition of reagin.

Discovery of infection in infants is hampered by the reluctance of private physicians to attempt to secure blood specimens from them. There is genuine need for the development of reliable serologic tests which do not require large volumes of blood.

The incidence of the disease in infants in Delaware is very low indeed. We cannot be satisfied with this, however, as the appearance of even one case represents a failure and not just an unfortunate accident. We must continue to develop our program for the care of the expectant mother until we can confidently say "It can't happen here." While continuing to stress the value of a serologic test made at the first examination of the expectant mother, we must also urge that it be repeated late in pregnancy lest we overlook infection acquired since the implantation of the fetus. Likewise we must be mindful that however late the discovery of infection in the mother, there yet may be time to administer treatment enough to spare the child or to cure him of infection while still in utero. Such a patient is a medical emergency entitled to extreme arrangements for prompt treatment.

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Just as long as cases of congenital syphilis are being discovered, we must intensify our efforts to find yet another, whether he be the child of a patient already known, or whether he be found by school surveys, dental examination or clinical investigation. Yes, congenital syphilis must still be considered a problem in Delaware, a problem worthy of the combined efforts of obstetrician, pediatrician, epidemiologist, service agencies and others. All must meet the challenge to eliminate this blot on our record, which need no longer exist if we but utilize our full potential in the attack.

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## DIAGNOSIS: CLEANER WATER NEEDED

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During the past few years much time, effort and money have been expended towards water pollution abatement throughout the entire country. In the present day of rapid industrial development it has become more apparent that we do not have unlimited resources and the preservation of our most important resource, water, has become a matter of paramount importance.

Disease producing organisms, especially those causing diarrhea, may be present in sewage. The greatest problem of pollution is its effect on public water supplies by overloading the treatment devices so that they pass intestinal organisms and by producing intestinal irritants in water which are not removed by filtration. Sewage pollution of bathing waters and shell-fish areas may result in epidemics of typhoid or other intestinal diseases. Therefore, proper waste treatment which reduces the pollution and intestinal organisms aides in the production of a safe drinking water at a lower cost, prevents contamination of shell-fish, and permits bathing and water sports.

Sewage and industrial wastes discharged into streams and water courses affect the comfort of the people by producing odors and discoloration, cause nuisances from sludge and interferes with bathing facilities.

The economical losses resulting from pollution should not be overlooked. The discharge of wastes affects industrial supplies by changing the character of the water. Odors and gases from sewage affect real estate by causing paints to blacken. Wastes cause damage to boats. Pollution of shell-fish beds removes an important source of revenue of many people.

The state of Delaware has taken the important major steps towards solving its varied problems pertaining to the pollution of its streams, lakes and ponds.

During the past fiscal year, not only did the legislature pass a Water Pollution Control Act establishing the Water Pollution Commission, but also an entire compliment of specialists in pollution abatement have been engaged. In addition a complete and modern laboratory has been equipped and is now in operation.

The type of wastes entering the waters of our State are notably domestic, poultry packing, cannery and chemical in nature. Although the wastes entering the streams vary in character, the effects upon the waters, generally speaking, are similar.

The entire problem of pollution abatement is based upon determining the most economical usage of the particular waterway in question. Priority naturally goes to domestic water supply. The Utopian concept would be to prevent any contamination whatsoever of our waters so that all water would be available as a source of water supply. This concept is unjust, uneconomical and unwise. A community has various interests in its streams, ponds and lakes other than a possible source of drinking water. Industry needs clean water; bathing needs clean water; fisheries need clean water; navigation depends upon clean waters, and odd as it may seem, domestic and industrial waste disposal need clean water to minimize their detrimental effects upon the stream. All of the above interests have an effect on the most economical usage of a tributary stream, pond or lake.

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A stream has the ability of self purification, provided pollution is not excessive as to interfere with its natural functions. Each of the interested parties of a community have an inalienable right to part of its tributary stream. The needs of these parties not only differ widely, but affect each other, either directly or indirectly. Consequently, a just distribution of a stream is necessary. It is the problem of the Water Pollution Commission to make this just distribution.

The evaluation of a water shed as to it most economical usage is not a simple problem. No two basins are alike and each has its specific physical, chemical and biological characteristics which must be studied separately. The Water Pollution Commission has begun a survey of the Broadkill, Mispillion and Appoquinimink basins. The detailed analyses being accumulated from each basin pertaining to the extent of existing pollution and ability to self-purify will help establish the base line from which an estimate can be made of the pollutional load a stream can absorb without ill effects. From the maximum permissible load, a minimum set of standards for the specific body of water can be established. The streams may be classified either in their entirety or by various zones on the stream, consistent with the highest recognized use of such waters considering the best interests of all the people of the State.

After having established the standards and the zones to which they apply the second phase of the Water Pollution Commission program will commence. All communities and private interests will be required to comply with the standards established within their zone. Persons responsible for pollution in excess of their specific set of standards must provide the necessary means of purification to fulfill their obligation.

Waste treatment methods will be similar in many instances but specific problems will be encountered and the technical assistance of the Water Pollution Commission will be available.

## FOR A CLEANER ENVIRONMENT

Donald K. Harmeson,*
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The ever increasing population of the world is mute evidence that man has, at least, to a certain extent, been successful in the control of his environment. Environmental sanitation has contributed greatly to the reduction in the prevalence of the water and food-borne illness. But if we wish to maintain these records and, if possible, to establish even better ones, we must be always on the alert for conditions which might favor the spread of such illness. Recent legislative acts and regulations adopted by the State Board of Health will assist in the campaign to prevent disease. Among these are the Delaware Water Pollution Control Act, an act regulating the processing of poultry, an act establishing basic plumbing principles in Kent County, the revision of the State milk regulations, and the adoption of regulations governing frozen desserts.

Everyone is interested in clean waters for the state. The family likes it for an enjoyable outing or a vacation; the industry needs it for increased production, and the farmer wants it for his cattle or for irrigation. In 1949, the state legislature passed an act whose purpose is "to safeguard the quality of state waters against pollution by (a) preventing new pollution in such waters and (b) controlling any pollution existing there at the time of adoption of the act." Although the act established a Water Pollution Commission, the State Board of Health was delegated to carry out the activities which would be necessary. A description of the progress in this regard is included in another article in this journal.

In Delaware the poultry industry has grown until it is a business which contributes a major portion of the farm income of the state. A part of this growth is the result of the development of processing plants which can handle as many as 100 chickens per minute during a day's operation. The killing, picking, cleaning and packing of this great number of chickens creates many problems of proper handling of the chickens; the wastes such as blood, feathers, manure and diseased birds; and the provision of satisfactory water supply and toilet facilities. In order to assist in this sanitation problem, the State Legislature passed an act regulating these chicken processing plants and the State Board of Health adopted sanitary regulations there-under. These regulations were received with varied reactions by the chicken processing industry. Although there was a general feeling for the need of such measures, some of the plant operators have failed thus far to cooperate readily. At the present writing the Board of Health has commenced legal action towards one of the plants which has been slow to react to recommendations for improvement.

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*State Sanitary Engineer.

The Legislature also passed an act which required that the State Board of Health prepare a plumbing code for Kent County and license all plumbers practicing in the county. The purpose of this act is the protection of drinking water supplies from the possibilities of contamination through faulty plumbing fixtures. As disagreeable as it may seem, faulty plumbing can allow the used water from a lavatory, tub or flush toilet to be drawn into the water line and consumed by residents of the building or adjoining buildings. The Kent County Code has been prepared and went into effect July 1, 1950. More than sixty plumbers have received registration with the State Board of Health. New Castle County has a somewhat similar code which is administered through the County Engineer's office. There is no code for Sussex County.

The sanitary control of dairy products throughout the State has been strengthened by the revision of the milk regulations and the adoption of regulations affecting frozen desserts. The most outstanding addition to the milk regulations is the requirement that after November 1, 1950, no milk may be sold to be consumed raw in the state of Delaware. This is certainly a forward step towards the elimination of undulant fever and bovine tuberculosis.

The frozen dessert regulations regulate the sale of ice cream, frozen custards, sherberts and frozen ice confections. Operators of plants which manufacture or sell these articles in Delaware must obtain a permit.

Each of these acts or regulations resulted from a need for better control of the activity in question. Now that we have them, it is our responsibility to see that they are effectively used so that tomorrow Delaware will be a better place in which to live.

## DIETARY VERSUS BLOOD CHOLESTEROL*

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With the rapidly growing interest in degenerative diseases, one high point of interest is in dietary cholesterol and any possible relationship it may have to blood cholesterol and the development of arteriosclerosis. More recently some weight reduction diets have recommended large amounts of animal protein. This animal protein usually carries with it a marked amount of fat and consequently cholesterol. Some doctors have raised the question of whether arteriosclerosis may be an acute disease as well as chronic.

A review of some current literature on dietary versus blood cholesterol has increased our interest and points to the need of more research in this field. Some of the work is as follows.

"Arteriosclerosis" is a term used to describe the deposition of lipids, including cholesterol, in the arterial walls of man, and/or the formation of calcium deposits and other pathologic changes in the larger and smaller vessels in man. Reasons for this deposition are unknown.

Seegal (1) suggests that cholesterol may be important in this condition, since it occurs in considerable amounts in artiosclerotic plaques.

Faber (2) has determined the cholesterol content of 50 human aortas. There was a gradual increase with age. Aortas from persons with hypertension had cholesterol contents far above normal. Although arteriosclerosis can be produced experimentally in rodents, by feeding a diet high in cholesterol, neither this finding nor its converse has been demonstrated experimentally in man.

The effects of cholesterol in the body can

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*Material presented by courtesy of Nutritional Observatory, April, 1950.
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be investigated either by raising or lowering its cholesterol content. The effects of feeding large amounts of cholesterol to animals have been investigated in cats, rats, guinea pigs, rabbits, chickens, and a comparative study of rats, guinea pigs and rabbits. Cook and McCullagh (3) In all species, but especially the rabbit, the blood cholesterol was elevated. The greater part of the absorbed cholesterol was localized in the liver, except for the rabbit, in which there was a generalized infiltration of cholesterol into all the tissues of the body. It should be noted, however, that a 65 kilo (143 lb.) man would have to eat 54 eggs a day to equal the amount of cholesterol given to the rabbits in these studies. No comparable levels of cholesterol have been given to human subjects. Okey (4) was able to show a slight but consistent rise in the postabsorptive level of blood cholesterol in women eating four egg yolks daily for a month.

There is apparently some connection between the synthesis of cholesterol and the endocrine glands. Chaikoff (5) has shown that an increase in the blood cholesterol of chickens, leading eventually to an arteriosclerosis of the aorta, can be produced either by cholesterol feeding, or implantation of the synthetic estrogen, stilbestrol. The feeding of desiccated thyroid with cholesterol to chickens reduces the blood cholesterol values and incidence of arteriosclerosis Dauber et al. (6). Thiouracil, which decreases the production of thyroxin, raises the blood cholesterol level, either when fed alone, or, strikingly, when fed in combination with cholesterol. Steiner et al. (7).

It will be seen that the experimental production of elevated levels of blood cholesterol is not difficult. The converse of this statement does not hold. Since cholesterol is so readily synthesized, controlling the intake of cholesterol may have very little effect upon cholesterol metabolism in the body. Restricting the level of cholesterol in the diet does not necessarily lower the blood cholesterol level. Very rigorous low fat diets, such as the Kempner rice diet, may, however, produce significant decreases in blood cholesterol.

### SUMMARY

Cholesterol is an ubiquitous, and probably indispensable, constituent of all animal cells. It can be synthesized in the liver from simpler molecules, or supplied by the diet. Elevated blood cholesterol levels tend to be associated with arteriosclerosis and many different techniques can be used experimentally to produce "arteriosclerosis" by raising such levels. It is very difficult to produce a lowering of cholesterol by dietary restriction. The elevated blood cholesterol levels typical of certain diseases may be caused by disorders of cholesterol synthesis and metabolism rather than by excessive dietary intakes.

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## TRENDS IN INFANT MORTALITY

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The extraordinary success achieved in reducing the mortality in the hazardous first year of life provides one of the most commendable chapters in the history of the American Public Health movement. The infant mortality rate in the United States is 32 and in Delaware 28, which is about a third of the rate in 1916, when the infant mortality rate was 101 deaths per 1000 live births in the United States and 131 for Delaware. Table (1.) This constitutes a 10% loss of life during the first year for those exposed to mortality risk during that 12-month period. The improvement in infant mortality reflects in large measure the progress made in the control of the infections in early life. Since 1916 Delaware has had a 75% decline in the number of deaths from influenza and pneumonia, among infants; there has been for diarrhea and enteritis a remarkable reduction—nearly 100% from the 159 deaths under 1 year of age in 1916, to 3 deaths in 1948. From the principal communicable diseases of childhood the mortality in infants has been reduced nearly 90% in Delaware during this 35-year period.

Considerably less rapid has been the fall in mortality from the conditions arising in uterine life and at birth. The loss of life from these, which include premature birth, various

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*Statistician, Delaware State Board of Health.

### TABLE I

INFANT MORTALITY RATE PER 1000 LIVE BIRTHS — MORTALITY FROM PREMATURITY PER 1000 LIVE BIRTHS

| | INFANT MORTALITY RATE PER 1000 LIVE BIRTHS | | MORTALITY FROM PREMATURITY PER 1000 LIVE BIRTHS | | |
|---|---|---|---|---|---|
| Year | United States | Delaware | United States | Delaware | Number Premature Delaware Mortality |
| 1916 | 101.0 | 131 | 19.3 | 23.2 | 119 |
| 1917 | 93.8 | 141 | 19.1 | 20.3 | 101 |
| 1918 | 100.9 | 151 | 20.2 | 30.6 | 156 |
| 1919 | 86.6 | 119 | 19.2 | 22.1 | 108 |
| 1920 | 85.8 | 122 | 19.4 | 24.2 | 117 |
| 1921 | 75.6 | 99 | 17.9 | 17.9 | 91 |
| 1922 | 76.2 | 101 | 18.1 | 19.1 | 89 |
| 1923 | 77.1 | 103 | 17.8 | 19.1 | 87 |
| 1924 | 70.8 | 91 | 17.7 | 19.3 | 89 |
| 1925 | 71.7 | 90 | 17.2 | 17.1 | 80 |
| 1926 | 73.3 | 92 | 17.7 | 19.7 | 84 |
| 1927 | 64.6 | 71 | 16.8 | 18.2 | 78 |
| 1928 | 68.7 | 78 | 17.6 | 19.3 | 84 |
| 1929 | 67.6 | 82 | 17.5 | 17.8 | 77 |
| 1930 | 64.6 | 78 | 16.7 | 17.3 | 78 |
| 1931 | 61.6 | 84 | 16.0 | 18.5 | 78 |
| 1932 | 57.6 | 67 | 15.8 | 18.3 | 77 |
| 1933 | 58.1 | 60 | 15.8 | 14.8 | 59 |
| 1934 | 60.1 | 60 | 16.2 | 15.5 | 62 |
| 1935 | 55.7 | 66 | 15.4 | 14.3 | 58 |
| 1936 | 57.1 | 65 | 15.7 | 15.9 | 63 |
| 1937 | 54.4 | 67 | 15.3 | 18.1 | 79 |
| 1938 | 51.0 | 53 | 14.3 | 13.7 | 61 |
| 1939 | 48.0 | 44 | 14.2 | 12.4 | 55 |
| 1940 | 47.0 | 50 | 13.7 | 15.4 | 71 |
| 1941 | 45.3 | 43 | 13.3 | 11.6 | 59 |
| 1942 | 40.4 | 46 | 12.3 | 12.7 | 72 |
| 1943 | 40.4 | 45 | 11.8 | 15.1 | 95 |
| 1944 | 39.8 | 48 | 11.9 | 16.1 | 97 |
| 1945 | 38.3 | 37 | 11.6 | 11.5 | 69 |
| 1946 | 33.8 | 29 | 12.1 | 11.5 | 80 |
| 1947 | 32.8 | 30 | 11.1 | 13.1 | 103 |
| 1948 | 32.0 | 28 | 11.1 | 11.5 | 85 |
| 1949 | | 30 | | | |

congenital disabilities, and injuries at birth, has been reduced some 30% during the period under consideration.

As a result of these achievements in disease control, more and more emphasis should be directed at the hazards encountered before and at birth. Deaths from these causes are largely confined to the neonatal period. At the present time about twice as many babies die during the first month as during the remaining eleven months of life. In order that we may further reduce loss in infancy, greater attention must be focused on the factors which affect the unborn child and to the improvement in quality of obstetrical service. At the present time particular emphasis is being placed on premature births which account for about one third of all deaths during the first year of life and for about one half during the first month. A great many communities are conducting extensive programs in the care of the premature infant.

With the increasing interest in further reduction of infant mortality through the study for prevention and better care of prematures the Association of Maternal and Child Health and Crippled Children's Directors have gone on record at their annual convention as having recommended certain definitions and minimum statistical tabulations necessary for the proper future study of the premature problem. As follows this Association issued the proposed recommendations.

### PROPOSED RECOMMENDATIONS OF ASSOCIATION OF MCH AND CC DIRECTORS REGARDING PREMATURE INFANT MORTALITY STATISTICS

In view of the wide differences in methods of reporting mortality among premature infants and in view of the impossibility of making valid comparisons unless there is some uniformity in reporting methods, the Association of Maternal and Child Health and Crippled Children's Directors recommends the adoption of the following uniform procedures on a nationwide scale:

1. A premature infant should be defined for the purpose of statistical evaluation as a live born infant weighing less than 2500 grams or less than 5½ pounds at birth.

2. Health departments should calculate mortality rates for all premature infants in the community. Either of the following methods is satisfactory:

   a) All deaths under a specific age in given year for each birth weight group, related to: all live births in given year for each birth weight group.

   b) All deaths under a specified age among infants born in given year for each birth weight group, related to: all live births in given year for each birth weight group.

3. The number of births and infant deaths of unknown weight should be reported. If gestation is available it should be used to estimate the distribution of these infaants by weight, on the basis of the distribution ot births of known weight by gestation and weight.

4. Published figures should include both kinds of rates: 1) rates based on total figures including infants of estimated weight and 2) rates based on infants whose weight was stated on the birth certificate. The percentage of infants with birth weight stated should be included in the published figures.

5. Mortality figures for all infants weighing less than 2500 grams should be presented in 500 gram weight groups according to the following scheme:

   Under 1000 grams
   1000-1499 grams
   1500-1999 grams
   2000-2499 grams

6. In comparing mortality figures, consideration should be given to the percentage of non-white babies and the percentage distribution within the premature group of different weight groups.

7. Every effort should be made to obtain accurate reporting of birth weight on birth certificates.

8. More active efforts should be made to secure accurate reporting of fetal deaths and live births.

9. A standardized method of presenting mortality statistics among prematures should be determined and put into nationwide use.

The Statistical Section of the American Association of Registration Executives at a national meeting in April agreed to the necessity of having standardized methods of tabulating prematurely data by all states as well as with items to be tabulated. As has been shown on the Delaware Certificate, the tabulation of birth is thought best to be by gestational age as well as in grams or pounds and ounces. It is interesting to know that in spite of the shortcomings of the weight system it is much more accurate than the estimation of gestational age. At the present time pregnancies terminating from 28 weeks to 37 weeks in utero have been considered premature. The 28 weeks is used as a lower limit since it is the consensus that a fetus of less than 28 weeks gestation has not developed sufficiently for extrauterine survival. The upper limit, the end of the 37th week, is set because the date of beginning of pregnancy cannot be estimated more accurately than within a 2 or 3 week period, and therefore an infant must be born more than 2 weeks before term (defined as 40 weeks) to be considered premature.

However many birth attendants are recording 36 weeks gestation as full term births. This error apparently arises from the method used by some attendants in converting months to weeks, that is multiplying each calendar month by 4 to obtain weeks. Tabulation of gestational age among births often shows an abnormal number stated as of the 40 week interval, which error arises from the attendants unconcern with attempting a more accurate estimate of the actual gestational age. It is known that recurrence of biological variables approach a central measure but do not achieve it exactly in such high percentages of cases as the 40 weeks reported. There is a tendency for frequencies to cluster around the central or most often repeated value. More exact statement of gestational age is encouraged since our future tabulations will include these together with weight of the infant in the metric equivalent, such data being gained by conversion from present avoirdupois weight system now used. Tabulations will be available by weight in both systems. We have accepted in principal the definition of prematurity as that recommended by the American Academy of Pediatrics, to the extent that our data will be cross tabulated by period of gestation as well as by weight. Their definition regards, "a premature infant as one who weighs 2500 grams or less at birth regardless of the period of gestation." This definition has simplicity but when one considers the wide somatic variation which the human species can take without affecting physiological response it also opens to question if data obtained from birth weights would be of greater value in the estimation of prematurity than clinical histories of gestational age.

Exception to the 2500 gram (5 lb. 8 oz.) or less maximum weight for prematures is shown in the following study.

"Anderson, Brown, and Lyon[1] suggest that the gestation period for the Negro infant may actually be shorter than for a white infant and that race and sex should be considered in the definition of prematurity. In a later study these authors presented data that they consider justification for lowering from 2,500 to 2,350 gm. the upper limit of birth weight for prematurity among Negro infants in order "to make their stage of maturity more comparable to that of the white infants." When this was done the differences in the incidence of prematurity between white and Negro mothers disappeared, both for well mothers and for those who had some complications of pregnancy. This study was based on 1,259 live-born premature infants (580 white and 679 Negro infants weighing less than 2,500 gm.) in a series of 13,526 consecutive single births."

In a review of premature births for Delaware in 1949 (Table II) there is shown 443

## TABLE II

### NUMBER OF PREMATURE BIRTHS IN DELAWARE FOR THE CALENDAR YEAR 1949 using less than 37 weeks GESTATION AS THE CRITERION

| | — 2 lb. 3 oz. — 1000 grams | 2 lb. 4 oz. to 3 lb. 5 oz. 1001 to 1500 grams | 3 lb. 6 oz. to 4 lb. 6 oz. 1501 to 2000 grams | 4 lb. 7 oz .to 5 ib. 8 oz. 2001 to 2500 grams | 5 lb. 9 oz. to 6 lb. 10 oz. 2501 to 3000 grams | 6 lb. 11 oz. to 7 lb. 11 oz. 3001 to 3500 grams | 7 lb. 12 oz. plus 3500 grams plus | Total with weight stated | not stated | TOTAL (Weight stated and not stated) |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 weeks & under | | | | | | | 1 | 1 | 2 | 3 |
| 21 to 24 weeks inc. | 11 | 3 | | | | | | 14 | 4 | 18 |
| 25 to 28 weeks inc. | 13 | 23 | 7 | 4 | 1 | | 1 | 49 | 6 | 55 |
| 29 to 31 weeks inc. | 1 | 6 | 20 | 10 | 3 | 1 | 2 | 43 | 5 | 48 |
| 32 to 36 weeks inc. | 1 | 10 | 43 | 121 | 62 | 49 | 15 | 301 | 10 | 311 |
| Stated only as premature | | 3 | 2 | 2 | | | | 7 | 1 | 8 |
| TOTAL | 26 | 45 | 72 | 137 | 66 | 50 | 19 | 415 | 28 | 443 |
| | | 280 | | | | | 135 | | | |
| | | | | 415 | | | | | | |

## TABLE III

## DELAWARE 1949

## BIRTHS WITH FULL TERM GESTATION (37 WEEKS OR OVER) WEIGHING LESS THAN 5½ pounds or 2500 grams

| | — 2 lb. 3 oz. — 1000 grams | 2 lb. 4 oz. to 3 lb. 5 oz. 1001 to 1500 grams | 3 lb. 6 oz. to 4 lb. 6 oz. 1501 to 2000 grams | 4 lb. 7 oz. to 5 lb. 8 oz. 2001 to 2500 grams | 5 lb. 9 oz. to 6 lb. 10 oz. 2501 to 3000 grams | 6 lb. 11 oz. to 7 lb. 11 oz. 3001 to 3500 grams | 7 lb. 12 oz. plus 3500 grams plus | not stated | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 37 weeks | | 1 | 2 | 5 | | | | | 8 |
| 38 weeks | | | 4 | 7 | | | | | 11 |
| 39 weeks | | 1 | 13 | 43 | | | | | 57 |
| 40 weeks | 2 | | 14 | 52 | | | | | 68 |
| 41 weeks | | | | 1 | | | | | 1 |
| 42 weeks | | | | 2 | | | | | 2 |
| Total with stated weight | 2 | 2 | 33 | 110 | | | | | 147 |
| Not stated | | 3 | 6 | 10 | | | | | 19 |
| TOTAL | 2 | 5 | 39 | 120 | | | | | 166 |

premature infants 28 of which had no weight shown. Of the total number with weight shown (415) 280 were 2500 grams or less, and 135 were over 2500 grams. By gestational age then we have included 135 infants which would have been omitted by weight classification. From this table it is indicated that birth attendants have in a number of cases used 36 weeks as full term from the number observed in the category of higher weight groups. From Table III we observe that there would be 147 prematures by weight classification who are not so classified at present due to their gestational age being in excess of 37 weeks. In summary for 1949 Delaware had 415 prematures of known gestational age and by that definition which is recommended by the Bureau of Census, the Children's Bureau, and the American Public Health Association. By weight of (2500 grams) 5 lb. 8 oz. or less we have 427 premature infants with weight stated on birth certificates. There seems to be a small differential between 415 by the gestational age method and 427 by the weight method. The weight of 2500 grams (5 lb. 8 oz.) or less has been most generally used as a criterion for prematurity. The weight is easily taken and although not an exact indicator of prematurity, has provided a satisfactory criterion of the need for special care as well as a uniform basis for statistical analysis.

The Division of Vital Statistics plans to furnish pretabulated data on prematures to the National Office of Vital Statistics in cooperation with other States. Such data will show infant specific mortality by weight classes as recommended by Maternal and Child Health Directors. Such a program has objectivity—the saving of more premature babies.

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# CLEFT PALATE AND ALLIED CONDITIONS IN THE STATE OF DELAWARE FROM 1940 - 1950

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From a recent survey of the number of congenital malformations reported on the birth certificates in the state of Delaware over a period of ten years (1940-1950) the following data is presented:

| Year | Congenital Malformations Reported | Number of Births Reported |
|---|---|---|
| 1940 | 0 | 4608 |
| 1941 | 0 | 5094 |
| 1942 | 3 | 5665 |
| 1943 | 1 | 6299 |
| 1944 | 2 | 6037 |
| 1945 | 1 | 6019 |
| 1946 | 8 | 6959 |
| 1947 | 10 | 7878 |
| 1948 | 12 | 7405 |
| 1949 | 27 | 7546 |
| 10 years | 64 | 63510 |

Of the congenital malformations recorded, those representing a cleft palate or an allied condition were 14 in number. These were distributed in the following categories:

| | |
|---|---|
| Cleft Palate | 5 |
| Cleft Lip | 5 |
| Clept Lip and Cleft Palate | 4 |
| | 14 Total |

Those cases of cleft palate and related anomalies known to the Delaware State Board of Health at the present time number 57 in total, 33 of whom were born between 1940 and 1950. The distribution of these 33, by types, is:

| | |
|---|---|
| Cleft palate | 20 |
| Cleft lip | 3 |
| Cleft palate and cleft lip | 8 |
| Cleft palate and bifid tongue | 1 |
| Bifid uvula | 1 |

Recent studies of the incidence of cleft palate and associated malformations indicate that one child with this defect (or defects) is born in every 700 live births. In the 63,510 births reported in Delaware from 1940 to 1950 there would be 80 children who had a cleft palate, cleft lip, a combination, or some related anomaly.

A new type of birth certificate was adopted by the State Board of Health in 1941. On this form there is space allocated for a description of any malformation which the physician detects when the child is born. It is obvious from the survey that there should be more accurate recording in the future.

The writer is particularly interested in these statistics because a very high percentage of these children need speech therapy and a number of them have a hearing loss of some degree which would necessitate work through the audiologist. If they can be referred for these services at an early age (at 2 years or shortly thereafter) their prospects for adequate communication skills are much better. Left without assistance, they might lead an ordinary existence, but the opportunities for a full and happy life would be limited.

Accurate recording through detection at birth, followed by an early referral for speech and hearing therapy will lead to more substantial and effective functioning of the Crippled Children's Services of the State Board of Health.

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# STUTTERING CAN BE A CRIPPLING CONDITION

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It is unlikely that anyone would argue that Billy, a nine year old with cerebral palsy, does not have a crippling condition. He has been diagnosed as a shudder athetoid. His arms are constantly in motion; his gait is not normal for a child his age, although he is able to walk. In addition, he has hearing and speech problems. He is regarded as a child with problems resulting from physical handicaps. He has disabilities.

Halting speech represents a disability, but it is not usually considered a crippling condition in itself. Yet the nineteen year old stutterer, Larry, with mental ability which rates him capable of handling college work and further professional training works as a garage mechanic because "with this job I don't have to talk with people." His stuttering blocks last as long as thirty seconds before he can get the word out that he is trying to say. He has the ability to handle a job with greater challenge than that of the garage mechanic; but his inability to talk without prolonged blocks and word repetitions and his reaction to it prevents him from doing any kind of activity where verbal communication of the standard set by society is of great importance. Larry shuns people because he dreads the ridicule often accorded the stutterer. He is afraid he will stutter when he talks, and that is one reason that the severity of his blocks continue. His arms and legs are not crippled, and he can't wear a brace to correct the condition from which his problems stem. Yet he is an individual with a handicap, and in one sense of the word, he is crippled.

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His problem is not just a speech problem; stuttering can hardly be considered a clinical entity.[1] It is primarily a specific language disorder? Is it a symptom of an anxiety? How is it affecting his way of living? How is it influencing his school achievement? Clinical experience shows that many stutterers suffer extreme social penalties, some of which are products of their own imagination. "He expects from all listeners the unpleasant responses he has received from a few."[2] Does it interfere with his earning a living of the type he desires and is otherwise capable of having? The speech therapist who works in conjunction with a psychologist might well be able to help Larry, although he will probably always stutter to some degree; perhaps he will need psychiatric help. Although no qualified clinician will promise to "cure" him, it is possible to teach some stutterers to use a controlled kind of stuttering. The attempt is made to build confidence in his ability to handle speaking situations acceptably even as a stutterer. He learns to recognize some of his speaking limitations and to handle them as well as he can.

Larry is regarded by speech pathologists as an actual stutterer. He is acutely aware of a speech deviation and the reactions of others toward it. His silent and repetitive blocks are prolonged. He blinks his eyes in an attempt to force through a block and say THAT word. He is an individual with many problems. Could his speech problem, at least, have been prevented?

Prevention is a basic part of any program in public health. The Delaware State Board of Health considers the possibility for preventing stuttering with attention to the family of the pre-school child whose speech exhibits characteristics of stuttering. The parents of the child believe he stutters. They are the ones who need help.

Before we discuss preventive measures for stuttering, consider some of the characteristics of speech of young children. From the age of forty weeks[3] when some infants say, "mama", "papa", "nana", "gaga", and "dada", until he is five or six and much of infantile speech has disappeared, the average child is learning to talk. Some of them articulate accurately at the age of three. For others, sounds are not completely clear until six years of age. Ages two to six represent the period of speech development. "At this age level the average child repeats forty to fifty times every thousand words; that is, he repeats a sound, s-s-s-such as this, or a word, such such such as this, or a phrase, such as such as such as this."[2] He is attempting to learn a vocabulary and to acquire skill in using it. Is it surprising, then, to find sound repetitions, prolongation of sounds, inappropriate pauses and hesitations under ordinary conditions and particularly under stress?

Examine the so-called normal speech of any adult. He, too, has sound repetitions, prolongation of sounds, inappropriate pauses and hesitations under ordinary conditions and under stress. We do not become overly concerned when such interruptions occasionally occur in the adult. Why should we place unnecessary emphasis on similar speech behavior in children who have yet to acquire a certain amount of fluency in their speech? Our corrections, reprimands, facial and verbal expressions of disapproval made in response to their speech can produce the strain, embarrassment and apprehensiveness often found in stutterers.

A careful study of case histories reveals that many adult stutterers showed normal characteristics of speech similar to those just described when they were children. Overanxious parents worried over the child's "stuttering" as they called it. They told him to stop stuttering, to hurry and say what he had to say, or to take a deep breath and then say it. All these suggestions served merely to draw the child's attention to his speech.

Wendell Johnson, Professor of Speech Pathology at the University of Iowa, has been responsible for a great deal of research in the field of stuttering. To parents of the pre-school child, he has suggested that the following observations be made:[4]

1. The conditions under which speech interruptions occur.
2. The fact that most of his speech is fluent and always has been so.
3. The fact that he is, generally speaking, a comparatively normal child.
4. The fact that other youngsters of his age are, on the whole, just about as hesitant and repetitious in speaking as he is, especially under certain conditions; such as, when he is "excited" or "talking over his head."
5. When he isn't speaking altogether fluently, he does not usually "go to pieces" or fail completely.
6. Avoid labeling a child a stutterer. The way you classify him will determine very largely the way you react to him.

Most speech pathologists recommend that word repetitions be completely ignored. A careful study of conditions producing speech interruptions will frequently show that these unpleasant situations for the child are unnecessary and can be eliminated. Van Riper[5] believes that unsure, hesitant speech can be produced in adult or child through pressures in the social situation. The individual who doesn't recall an appropriate or desired word or who doesn't know it will supply "uh" and "ah" as he tries to decide how else to express himself. The child who doesn't articulate well or who fears that he can't say a word "properly" will often stumble verbally. When he believes that the listener is not paying attention to what he says, or if he expects to have only a short time in which to tell his long exciting story, his speech rhythm will reveal his distress. If he expects an unpleasant response to his remarks (y-yes, I-I-I- uh-hit her.), he may repeat some of the sounds. Unnecessary insistence that the child speak at a particular time or the feeling created by others within him that he will be interrupted can result in breaks in fluency.

For some children serious repetitions disappear when parents are able to eliminate conditions which seem to promote them. For other children the problem is more complex. Philip J. Glasner[6] of the Children's Psychiatric Service in the Johns Hopkins Hospital has stated that "many children under five when stuttering *do not* exhibit the same calm totally unconcerned attitude characteristic of normal children when they speak with usual childhood repetition and speech inaccuracies."

There is no typical stuttering environment. That which produces emotional disturbances in one child with resulting non-fluency will have little effect on another child whose speech is regarded as normal. "In the study of psychosomatic medicine it has been found that emotional tension figuratively results in physiological disturbances. When this emotional tension occurs during the period when the child's speech pattern is being formed, it may well result in a dislocation of the speech pattern to be diagnosed as stuttering. However, why some children react to emotional pressures with stuttering while others react with other neurotic symptoms is not definitely known."[6]

The general practitioner or pediatrician frequently becomes aware of family concern over the young child's speech—whether it be lack of speech or speech that does not meet with the parents' expectations. The demands made by his practice, however, will often limit a more active interest. His help can be invaluable as one of a group who works with the child. The general practitioner or pediatrician can refer the pre-school child to a speech therapist from the State Board of Health, who will see the child and parent for a preliminary interview. Other personnel of this group might well include a medical social consultant, a psychologist, and a psychiatrist. The physician is able to take care of the child's general health, observe the existing speech problem, and refer the child to the proper agency.

## Summary

1. Stuttering is a crippling condition because of its possible psychological implications.
2. The possibility that stuttering in some children can be prevented is well worth consideration. The parent will need counsel because of existing home conditions which might be promoting the stuttering.
3. Word repetitions of a certain amount are considered part of normal speech development.

4. The physician is requested to refer the pre-school child who stutters to a qualified speech clinician.

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# THE SCOPE OF PHYSICAL THERAPY IN THE CRIPPLED CHILDREN'S SERVICE

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and
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Ever since the physical therapy program was created in 1947 under the Crippled Children's Service, it was indicated that additional staff would be necessary to carry out the functions of the program. With the employment of a second physical therapist during the year, we are a step closer to the realization of the aim of increasing physical therapy services and facilities for the crippled child in Delaware.

Probably one of the most important functions of the physical therapist is to give direct service to patients for whom physical therapy has been prescribed by the orthopedist. The therapist may be instructed to test and grade muscle power, to provide muscle training, to evaluate functional activities, to supervise corrective exercises, to perform massage, to assist in planning for the construction of equipment for home use, to apply various forms of heat and to explain the orthopedic recommendations and the objectives of the treatment. The plan for treatment includes:

a. actual demonstration of the procedures to be employed.
b. teaching of same procedures to a responsible family member.
c. instructing patients in suitable play activities to be carried on between visits.
d. conferring regularly with the orthopedist who made the referral.
e. recognizing other facts such as physical, emotional, social and economic problems which may affect the family health of each patient and consulting with the public health nurse, medical social consultant and other interested personnel regarding plans for the patient's care.

A written report of the treatment procedures is included in the patient's folder and becomes a part of the clinical record. It is important that progress notes be kept up-to-date and revised as necessary.

In the past year the physical therapists have visited more children on a more frequent basis, and as a result are of the opinion that—

1. A better relationship is established between the patient and the therapist.

2. A better relationship is established between the parents and the therapist. More opportunities are provided to become acquainted with the parents, and to instruct them in the treatment routines to be carried out between the visits.

3. More significant results are observed.

All patients on the physical therapy register are referred by the orthopedic consultants through the various crippled children's clinics in the state. Cerebral Palsy, scoliosis, Erb-Duchenne birth palsy, pes planus, poor posture, poliomyelitis, metatarsus varus, torticollis, and deformities resulting from injuries are some of the types of orthopedic conditions treated by the physical therapists.

In order to carry out the prescribed physical therapy treatments the therapist supervises the patients at home or in one of the treatment centers set up in:

1. Selected schools with the co-operation of the school superintendents and school nurses.
2. Clinics in selected rural areas.
3. Out-patient clinic of the Alfred I. du Pont Institute.
4. Governor Bacon Health Center.
5. School for the Handicapped—sponsored by the Delaware Society for Crippled Children and Adults.

In the future it is hoped that there can be further development of this service in the centers already functioning and in other centers to be established as the needs arise. It is hoped that through the further correlation of this service with other services indicated, the ideal concept of treating the crippled child as a whole will become a reality.

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## THE PUBLIC HEALTH NURSE AND THE POLIOMYELITIS PATIENT

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Public health nurses visit the homes of poliomyelitis patients for various reasons, sometimes even before the diagnosis has been made. When the diagnosis has been made, the public health nurse helps the family of the patient to understand the implications of the disease so that they will not be panic stricken.

If the diagnosed patient stays at home the public health nurse gives nursing care to the patient under the direction of the patient's physician and teaches the parent or other adult in the family how to give safe nursing care.

If the patient is to be hospitalized the public health nurse may be called upon in assisting to find transportation for the patient, especially if the patient lives in a rural area.

Another reason for a public health nurse's visit to the home of a poliomyelitis patient is to make the epidemiological investigation for the health department. This contact with the family of the patient gives the nurse an additional opportunity for teaching, and she is able to acquaint the family with the regulations of the state or city health department.

When the acute stage of the disease is passed, the public health nurse teaches the patient and the family the methods of caring for the convalescent patient. It is often impossible for the nurse to visit the convalescent patient frequently, and therefore, she must teach that part of the patient's daily nursing care which she considers the most important.

What does the nurse teach the family of a poliomyelitis patient? There are many areas in which teaching is indicated, but foremost, at this stage she needs to teach about rest, what rest is, and why rest is so important for the convalescent poliomyelitis patient.

There are many articles in the home which can be used for improvising sickroom equipment, and the family is usually very eager to make these adaptations of home equipment which add to the patient's comfort and help to keep him happy during the time he must stay in bed.

As a public health nurse is primarily a teacher of health she will include in her nursing care consideration of the general health of the patient. She will discuss with the mother and patient the importance of well balanced diet, regularity of elimination, necessity for rest periods for the patients and other matters concerning the health of the patient and the family.

When the poliomyelitis patient has reached the stage where the maximum recovery of muscle power has taken place the public health nurse continues to have an important function. Much of the fine work which hospitals, doctors, nurses, clinics, or nursing care at home have accomplished while the patient was in the acute and convalescent stage can be undone unless the patient continues to have regular medical supervision during the chronic stage. The public health nurse in her visits to the home emphasizes and explains the importance of medical supervision to check posture, gait, adjustment of braces to prevent further deformity. She teaches the care of braces, oiling, drying, and care of leather, etc.

Last, but not least, the public health nurse must assist the parents to understand that the patient should be encouraged to develop independence. She realizes that parents, in their love and concern, may over-protect the patient and thus prevent or retard the development of self-reliance. He should be given a share of the household chores within the limits of his ability to carry out. This gives him a sense of his own worth and develops inner security which will later enable him to take advantage of the splendid facilities offered by the Vocational Rehabilitation Services for the Handicapped. There is a useful place in the world for everyone, and to be really happy one must be useful.

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# PRESENT OPPORTUNITIES IN THE STATE OF DELAWARE FOR THE PRE-SCHOOL CHILD WITH A HEARING IMPAIRMENT

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A pre-school child with a hearing impairment frequently presents numerous problems to his family as well as his neighborhood environment. His hearing loss may range from mild to severe; the cause of his loss may be known or unknown; his developmental growth may be slow, normal, or precocious; he may live in humble or comfortable surroundings; yet his basic problems are almost identical. His hearing impairment has hampered his modes of communication and frequently the development of his communication skills. Until the fact of his hearing impairment is determined, he is often considered to be a behavior problem and/or a slow learning child.

To establish a point of departure from which we may plan a program to initiate or improve his communication skills, following his referral to our services, many factors of his development must be known or estimated.

1. The child's ability to hear sound—environmental sounds including the human voice.

2. The child's type and degree of hearing impairment.

3. The medical history and causal factors of the child's hearing loss and his general physical condition.

4. Possible remedial medical measures to insure as adequate hearing as can be expected.

5. The attitude of the parents, the family, the neighborhood, and the child himself regarding his hearing loss.

6. Past and present habilitation steps attempted for the child.

Frequently some of these six needs are unknown to the family or the individual responsible for the child's welfare. Immediate steps must be taken to see that they are completed as adequately as possible. Middle ear infections, enlarged and infected tonsils and adenoidal tissue, and cerumen are the causal or contributing factors of some hearing impairments. When these are medically treated, the problem of educating the child may become lesser in degree or eliminated.

An individualized program may then be established on an experimental basis for the child with permanent damage. Each child responds to different stimuli which compose a readiness for the development or improvement of his communication skills' program. For this reason, various methods must be tried. It is the duty of the parents and the family to see that the suggested methods are followed through at home. Communication skills cannot be developed or established or improved through a weekly lesson only.

The essential part of this experimental program includes the development of a need by the child to communicate orally. If the child is over two years of age, usually a form of sign language has been developed by him and his family to make his wants and needs known. He must, then, be given opportunities to form the realization that communication exists in facial expressions and facial movements in addition to body movements.[1] The length of time necessary for this realization or the beginning of speech reading depends upon the individual child, the parental cooperation, and the guidance which they receive. As soon as the child finds this mode of communication successful, a program to establish it and integrate it into every activity of the child and family may be begun. Many children begin speech reading as their means of understanding others before it is found that they have a hearing impairment. Some are so adept that it is difficult to realize they are using their eyes in addition to their ears.

When the child has begun speech reading, he also develops a need to begin or improve his own speech and language. If the child has a severe hearing impairment, learning to talk will probably be a lifelong program to him which makes it most important that he be guided as adequately as possible in his beginning years. The child with a moderate or mild hearing impairment may need help until his skills are developed, for he will be more likely to retain his speech patterns through the use of his own hearing. Speech and language is such a highly complicated skill that most children with severe impairments need constant help in its development.

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Speech reading, speech, language, and ear training are the four main aspects of a habilitation program for children with hearing impairments. An observer would find it difficult to designate which skill is being emphasized during a child's lesson. After a child has realized the need for oral communication, all of these four skills unite. Each sentence or phrase that is spoken involves every skill. Ear training, which has not been mentioned heretofore, is frequently aided with amplification. Those children who are able to benefit from hearing aids are fitted at as early an age as possible. This means that the parents of very young children (one and two years of age) must have guidance in its use as well as the children themselves.

Communication skills are not all that is necessary for the pre-school child with a hearing impairment. He frequently needs guidance in his personality development for one's success in getting along with others is greatly dependent upon one's ability to communicate. Parents are usually equally concerned with their child's behavior and his ability to talk and understand the speech of others. A carefully guided program is concerned with the child's general growth and development as well as his speech, speech reading, language, and ear training.[2]

To explain more fully this program which has just been briefly outlined, three children have been selected to serve as examples.

1. Paul, five years of age, was referred by by the Public Health Nurse, who was called into his home by his mother. Upon examining his hearing through observation and pure-tone audiometry, the audiologist found this he presented a mild hearing loss. Paul's speech was a jumble of sounds which only his parents, brothers, and sisters were able to understand. They noticed that he either did not answer when spoken to or asked for repetitions. The audiologist suggested he have a medical examination to determine the causal factors for his hearing loss and any possible medical treatment. It was found that he had a severe growth of adenoidal tissue and infected tonsils. Shortly after these were removed, his hearing was re-examined. He was found to have regained normal hearing. He is, at the present time, undergoing a program of ear training and speech therapy. His mother observes his weekly lessons and is given suggestions to carry through a program at home. Paul is a shy child who, because no one can understand him, prefers not to talk. At times he repeats sounds in an effort to speak more intelligibly. His mother is also receiving help from the audiologist to encourage a better emotional adjustment for Paul. When Paul enters school next fall, he will be confronted with additional problems. Contact with the school personnel will be made to aid their understanding of Paul's problems.
2. Alfred, four years of age, was referred by a hearing aid representative, who had noticed Alfred's extreme behavior problems when he sold a desk model hearing aid to Alfred's parents for the child's use. When Alfred was seen by the audiologist, it was recommended that he have a more complete evaluation by the Hearing and Speech Center at Johns Hopkins Hospital in Baltimore. An examination by an otologist revealed that no remedial measures could be employed to improve Alfred's hearing. Alfred was seen by the audiologist for a short period in order to prepare him for the testing at the Hearing and Speech Center. Because Alfred learns quickly and definitely has some residual hearing, it was possible to prepare him for speech testing in addition to pure-tone audiometry. He was found to have a speech reception threshold of thirty-five to forty decibels. His hearing loss as shown by pure-tone audiometry approaches normal hearing for low frequencies, but for frequencies above one thousand cycles, he does not register hearing until an intensity of fifty and sixty decibels is introduced to him. A small wearable hearing aid was suggested for Alfred. At the present time, he is being prepared for its use. Until he adjusts to it adequately, the audiologist has planned a more specific program. He is receiving bi-weekly lessons in the place of his weekly lessons. Alfred is also receiving help from the Mental Hygiene Clinic which is attempting

to improve his emotional problems. There are two more years ahead before Alfred will be of school age. It is hoped that he will gain sufficiently intelligible speech and the ability to communicate with others in this time, enabling him to be educated similarly to a hearing child. No doubt he will continue to present problems at home and find problems at school. There will be no need to send Alfred away to school for special education if he has an understanding teacher and someone trained to work with his specific hearing problems. It will take more than two years to habilitate this child completely.

3. Jay, three years of age, was referred to the audiologist by one of the speech therapists. Jay had had a complete otological examination which revealed that he had a severe bilateral nerve deafness. The causal factor was unknown and it was believed to be congenital of an exogenous type. Jay had been examined at the Hearing and Speech Center at Johns Hopkins Hospital in Baltimore, where it was believed that he had little or no residual hearing. Unsuccessful attempts had been made to enroll him in a residential school for the deaf. Jay communicated with his parents by a sign language which he had made up himself. Thus, only his parents could understand his wants and needs. He presented many problems at home because of his parents' inability to comprehend all of his communicative efforts. He hid under the bed, bit, kicked, threw things within reach, and attempted to run away. A program was established for Jay which necessitated a long experimental state. It was three months before Jay really recognized that communication existed in facial expression and facial movements. Jay began to improve immediately in his self-helps and emotional adjustments. He began to develop a few words which were "boo, no, mama, and thumb." He is now expanding his vocabulary as well as his ability to understand others. He continues to use his signs for his needs and wants, which he is unable to express verbally. He usually makes sounds while he signs now showing that he has some comprehension of continued speech and language. He did not fully accept a hearing aid when it was introduced shortly after his first attempts at speech. For a month the hearing aid was not brought into his lessons. Soon he began to ask for it by pointing to his ears. His mother noted that he was becoming aware of some of the gross sounds around the house and farm. An appointment has been made at Johns Hopkins Hearing and Speech Center for additional testing. It seems probable that he has some residual hearing which may be trained and used as an aid in his speech development or certainly as a warning signal in his environment. With special training Jay ought to be able to remain at home and attend a school for hearing children if that school has provisions for extra help by a trained teacher for aurally handicapped children. Because of the improvement in his behavior up to this time, there is reason to believe that he will have conquered many of his present problems by the time he is of school age. Jay's parents have done an excellent job with his problems. With help for three more years Jay and his parents as well as his community ought to have a greater insight into the implications of a severe hearing impairment.

All parents of preschool children with hearing impairments in Delaware have the opportunity for an individualized program for their children. Referrals to this program are accepted from anyone. Because this program is just a year old, there may be a waiting period for this help depending upon the openings in the county where the child resides. Supplementary suggestions are given at the initial interview of the child and parents. These may include attempts to begin the experimental program which will later be instituted and/or the suggestion of the use of correspondence courses. The correspondence courses may be used for supplementary suggestions only, for a highly individualized program through the mail is impossible.

It seems probable that pre-school education and guidance such as mentioned above, which is available through the Delaware State Board of Health, will allow each educable child with a hearing impairment to initiate the establishment of communication skills and a happy personality. It is the first five years of a child's life that "are the most fundamental and the most formative . . .".[3]

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## THE MEDICAL SOCIAL WORKER IN PUBLIC HEALTH PROGRAMS

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One of the important concepts of modern medicine is its focus on the treatment of the total person—not just on his physical disability. Physicians have found that medical treatment which does not take into consideration the personal or family difficulties, the personality and problems of their patients, is not the most effective. Medical social workers are being used increasingly throughout the country, in hospitals, clinics, medical care programs, and Public Health Units administered by State health authorities to help the patient with those social or emotional problems which stand in the way of his making the most constructive use of the services available. It is possible to give a patient better service when medical study and treatment go hand in hand with the treatment of unfavorable social factors. We quote from the recent Statement of Standards by the American Association of Medical Social Workers:

> "Social casework in a hospital, clinic, or sanatorium is concerned with helping the patient with personal or environmental difficulties which predispose toward illness or interfere with obtaining maximum benefits from medical care. This service depends upon individualized study of the patient so that his medical situation and its interrelationship with his personal needs and problems may be understood. Sharing of information between the doctor and the social worker is basic to their individual understanding of the patient. With this understanding the caseworker helps the patient participate in a plan consistent with the medical recommendations and acceptable to him."

The Delaware State Board of Health has two medical social consultants in its Division of Maternal and Child Health and Crippled Children's Services. Recently Miss Florence Gross has joined the staff at Brandywine and Edgewood Sanatoria as a medical social worker. Patients with tuberculosis requiring long time hospitalization often have many problems which have been brought about by the necessary disruption of the home in addition to their feelings about their illnesses. The patients, themselves, may be put in the position of keeping things to themselves and being brave about the whole matter to keep up for the family members, when actually it would be best for the medical conditions of these patients if they could receive relief from their feelings and help in adjusting to their medical conditions. Patients leaving the sanatoria against advice is a large problem. It is hoped that this problem, among others, can be reduced through the services of a medical social worker in cooperation with the doctors, the nurses and the other hospital personnel in behalf of the patients and their families.

Since practically all of the work of the medical social consultants in Delaware has been confined to those patients being served by the Division of Maternal and Child Health and Crippled Children's Services, we will limit our discussion to the handicapped child (including not only children with orthopedic conditions, but those needing plastic surgery, such as harelip, cleft palate, contractures from burns or other accidents; instead of conditions requiring neurosurgery; remediable hard of hearing; birth injuries and speech defects). Many of the problems discussed in this paper are pertinent to children with other handicaps (as cardiacs, asthmatics, etc.). The physician is often the first to recognize an environmental or personality problem interfering with the child's rehabilitative process. This problem may be an attitude on the part of the parents toward their handicapped child, which is felt to be detrimental to his progress—as an extremely over-productive, over-solicitous attitude, or one of more overt rejection. After some discussion on the part of the physician with the parents, if he finds the situation needs further study and help, he may refer it to the medical social worker. So much is done by the thoughtful physician to help alleviate fears and anxieties on the part of parents, such as giving adequate explanation of causes of handicapping conditions. It is a very traumatic experience for any parent to learn their child is permanently handicapped. They often feel this to be an indication of an inadequacy on their part. If the child happens to have been from an unwanted pregnancy, the parents may be consumed with a terrible guilt, which may propel them to constantly try to make up to the child at the expense of their own, as well as the child's emotional health. Within these early beginnings are shaped the child's future attitudes toward his handicap, and the situation deserves careful evaluation by the physician and medical social worker. Casework may be the medium through which the parents can gain insight into, and an understanding of, their problems and how they relate to the child's future adjustment. Psychiatric help may be needed.

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The patients' and parents' failure to carry out medical recommendations is sometimes a problem that physicians and medical social workers may work on together. Sometimes this may indicate only a need for a better understanding of the medical picture, or there may be other factors—the patient may resent suggestions for long time care which would separate him from his family or normal activities; he may hate to give up his apparent independence to accept semi-dependence as in a hospital; or the parents may not be able to accept separation from their child; or follow out any prescription which may seem painful to the child; and this list could go on and on. The extent of a child's disability is not always determined by the disability itself, but by the child's attitude toward it. The attitude often reflects that of his parents toward a handicap.

Where there is considerable familial strife, the various problems of the crippled child can be batted around both dangerously and indefinitely. In such instances, it would seem valid to evaluate the familial difficulties in a way which would offer clarification to those involved, though the problems themselves remained; then the parents might be better able to concentrate on the problems of the crippled child.

In the medical care of a child, it is so important to know what the illness means to the child as well as to the parents. Perhaps the child feels he is being punished for some wrong doing, or that his parents want him out of the way. He may also suffer from inferiority feelings—that he is just a weakling; he won't grow up to be big and strong as his neighbor's boys did; people will call him a sissy; he won't be able to keep up in school with the other children.

Some of the various problems the crippled child and his family may be facing are inability of the child, family, or both, to accept his handicap in a way that will allow him to live as full a life as possible; the child's inability to find an adequate place in the family group; the child's lack of education which may reduce his opportunity for self-support later in life; non-acceptance by the community because he is different; financial drain on the family which may cause the child to feel a burden; the child's lack of mobility which might cause life to be boring. Whether the child was crippled prior to, or at, birth, or later developed the handicap, is important to know for herein one sometimes finds part of the clue as to the kind of adjustment or lack of adjustment, that is being made.

One of the principles which casework operates on is that of respect for the individual and his right to make his own decisions. Sometimes medical recommendations will be followed more promptly, willingly and soundly, when the patient and the family are allowed to accept the necessary responsibility rather than when someone else attempts to assume it for them. Other times, a patient and his family are unable to move along without a great deal of supportive treatment. Usually, except for the very young patient, it is well for the child to participate in the planning, on his own level, of course.

From the point of view of the patient and his family, there can be much confusion and indefiniteness about medical conditions in terms of the present and what the future may hold. One potent factor, however, which the doctor, and he alone, has to work with is the doctor-patient relationship, which can be so meaningful—and primarily for the patient, whom we all want to serve to the best of our capacities.

The successful treatment of the handicapped children in the State of Delaware depends on two main factors: (1) the cooperative endeavors of members of the various professional, as well as lay, groups, under the leadership of the doctors, in behalf of the patients and their families; (2) the ability of the patients and their families to follow the medical recommendations, which take into account, social and emotional factors.

We, too, are interested in the total person. We are happy that our team includes, in addition to the doctors and the public health nurses, physical therapists, speech therapists, audiologist, nutritionist and oral hygienist, with whom we work, to help give the patients and their families the total service their health needs require.

Operating chiefly through the county health units, we stand ready to serve.

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## PROGRAMS OF DENTAL CARE FOR CHILDREN

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During the past decade American people have become increasingly aware of the necessity for good dental health. Recognition of this important fact is due in part to the findings released by the armed forces following the examination of selective servicemen in World War II, wide-spread advertising of dentifrices and other dental preparations, and the use of popular magazines, the radio, and more recently, television as a medium for health education. More effective than any or all of these facets for disseminating information and swaying public opinion, however, has been the encouragement offered by the dental profession since the introduction of fluorides and their faith in what these preventives can accomplish.

But, while the public is now aware of the need for dental attention and have evidenced concern regarding their ability to obtain it, few persons are in a position to visualize the magnitude of the problem which confronts those who must provide care. Fewer still have looked far into the future and pondered the question of what may or will be done as a result of the increased years of life expectancy. O'Rourke gives all of us something to think about when he says, "A child of today with average life expectancy will need his dentition forty-two years longer than the average child of the 16th century; twenty-seven years longer than those born at the time of the American Revolution; and seventeen years longer than those born at the beginning of the 20th century."[1]

But, without giving any thought to the future, and considering only the situation as it exists today, we are faced with a problem of enormous magnitude. In the past, less than 35 per cent of the population of this country has had adequate dental care. A survey made in the schools of this state in recent months revealed that less than fifty per cent of our own children had visited the dentist even once between January 1, 1949 and January 1, 1950. Dental examination of preschool and school children reveal an accumulation of unmet needs.

With the present shortage of dental personnel and the lack of facilities for training the vast number necessary to meet the demand, the chances of providing care for all who need it are hopeless. The Council on Dental Health of the American Dental Association together with individuals and groups of individuals who have devoted much time and thought to finding a solution to the problem suggest, among other possibilities, 1) adequate dental service for children and (2) the prevention of dental diseases through the application of preventive techniques as soon as they are demonstrated to be scientifically valid.[2]

Here in Delaware, we are attempting a solution to our problems. As we stated last year[3] ours was one of the first states to set up a program to provide topical application of fluoride for school children in the lower economic groups. That program is still in effect and to date, some ten thousand children have received the complete series of the prescribed four treatments.

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While the program of the Oral Hygiene Division of the State Board of Health is designed to promote those services necessary to the prevention of dental disease, namely, routine dental examination, prophylaxis, dental health education, and now the topical application of sodium fluoride, the staff has not been unmindful of the crying need for corrective dental service, and through the years its members have worked diligently to stimulate interest among children and parents to obtain such services from dentists in private practice. These efforts have not been in vain.

Fifteen years ago, in the early days of this Division, interest centered primarily in the one-room schools. Working with the teachers and members of the local Parent-Teacher Association, it was not unusual to have five or six such schools report annually that all children had returned their "corrective advice" cards signed by the dentist, indicating that all necessary dental work had been done. Later, similar efforts were made in the larger consolidated schools and what are now known as "continuing programs" were established.

These continuing programs, such as are now functioning in some fifteen or more schools throughout the state were instituted in the first grade. Each year thereafter until ready to enter junior high school, these same children receive dental care, the majority of them from their own family dentist. For those children whose parents are not able to assume full responsibility for payment of services, or can only pay in part, special provision is made. The local dentist or dentists, as the case may be, since in communities where there is more than one dentist, the services of as many as will participate are used, take care of these children in their own offices and are paid out of a special fund.

Such programs are termed "continuous" because the pupils receive dental care annually throughout their elementary school life. It may be noted however, that the program is not limited to just one group of children. Once established, the new first grade is included each year and these children follow through the same routine as the others.

While the number of children under dental supervision naturally increases each year with the inclusion of the new first grade, several studies have indicated that the actual amount of dental work to be done, along with the cost of the services rendered, is ultimately reduced. In 1946, the findings of one school in the lower part of Delaware, where such a program had been functioning for six years, were compared with those of several other schools in which no program had been established. In the school where the children had received regular dental care, examination of all children in the elementary grades revealed an average of .16 carious permanent teeth per child. Only third grade children were examined in the other schools and they averaged 2.5 carious permanent teeth.

It is not conceivable that a program of this nature, which includes all children regardless of economic status, can function without financial support, and this responsibility is usually assumed by the Parent-Teacher Association or some other community group or groups. During the past year a limited amount of funds were available from the State Board of Health and were used in part to assist community groups desirous of establishing such programs, but unable to raise enough money to defray the entire cost.

During the past two years some questions have been raised concerning the desirability of the dental interneship required in Delaware. In the opinion of the State Board of Health, our ability to obtain the services of such persons has been most opportune. This is especially true insofar as the colored children in our population are concerned since prior to the employment of the first colored dental interne in 1948, corrective dental service for those outside of Wilmington was almost impossible of attainment.

In New Castle county where such services have been available for the past two years, continuing dental programs such as have been described have been functioning in all the colored schools. This fall we hope to be able to extend the program into Kent and Sussex counties and continue there the program which was discontinued a year ago due to lack of personnel.

Studies have been made from time to time to determine the value of continuing dental programs. Beyond any doubt the results excel those attained in the average dental clinic set up for public welfare. Moreover they have considerable educational value. In the first place, they are associated with dental health education, incorporated as part of the school program; and the children, subjected to the influence of early and periodic dental care, acquire a habit which is not usually forgotten when they reach adulthood. Parents too, learn through the experiences of their children and realize that with continuity of dental care an accumulation of dental defects is impossible and that optimum dental health throughout life is readily possible of attainment.

Despite the efforts which have been made in the interest of better dental health, it is fully realized that very little has been accomplished thus far. The problem is so enormous, and includes so large a percentage of the population that hopes of finding a solution are almost futile. It is possible, however, that the suggestions made for dental services for children will prove significant, and for them at least, something may be done.

The participation of community groups in all activities relating to health and welfare is now recognized as highly desirable since their interest is significant of growth in understanding and knowledge of the problems we are facing. With professional leadership and guidance much that is worthwhile may be achieved.

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# USEFUL LOCAL AND GENERAL HEMOSTATICS IN THE MANAGEMENT OF ABNORMAL BLEEDING*

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There are few men in the practice of medicine who have not, at one time or another, been faced with the problem of a patient having what seems to be intractable bleeding. After trying the usual devices with only temporary success, the physician begins sooner or later to wonder as to the fundamental cause for the continued bleeding. Our understanding of the natural mechanism for the arrest of bleeding is expanding. It might be of interest to review here briefly and informally some modern concepts of this mechanism and the field of usefulness of the more commonly employed tools intended to influence it.

After the skin is cut, it bleeds for a certain length of time and then stops. In the short time that it has taken for the bleeding to stop, a number of factors have come into play to make sure that the bleeding does not go on. It is a disturbing fact, therefore, to be confronted with a hemorrhage that goes on for hours or days from what sometimes looks like a trivial wound. There the hemostatic mechanism has failed. Why?

The arrest of bleeding involves principally the operation of three types of factors. There are factors which operate on the blood vessel from the outside (extravascular factors), those that reside in the wall of the vessel itself (vascular factors) and those that reside in the blood (intravascular factors)[1]. Nature has endowed circulating blood with what might be called duality of behavior, in that it can maintain itself fluid so it can flow swiftly, but it also can gel, when it is necessary to keep from flowing excessively. It is through the well timed and coordinated operation of these factors, that bleeding only goes so far and no farther. In order to correct excessive bleeding, it is useful therefore to find in which one of these groups is the defect. Let me give you an example. Take the person who has a prolonged bleeding time, or uncontrollable hemorrhage because of thrombocytopenia. The bleeding in this disorder originates from small vessels, the capillaries, the venules and the veins; seldom from the arterioles and the arteries. The reason for that is that platelets are concerned chiefly with arresting bleeding from tiny vessels (capillaries, venules) and from the larger veins. That is why multiple, scattered small hemorrhages in the skin and in the mucous membranes result from thrombocytopenia. Unfortunately defects in the walls of the vessels themselves, in our experience, outnumber by far, defects in the blood. And since our knowledge is still meager concerning the mode of operation of vessels in controlling hemorrhages just what forces

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*Read before the Medical Society of Delaware, Wilmington, October 11, 1949.

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make them contract, twist and retract, and thereby reduce and eventually stanch blood flow—we are often helpless in attempting to overcome the resulting disorders.

There are several tools at our disposal to correct defects in the mechanism of hemostasis. They can be divided, generally speaking, into two categories: a) systemic and b) local hemostatic agents. Systemic hemostatic agents are intended, generally, to supply deficiencies or correct excesses that exist in certain patients. Perhaps one of the commonest deficiencies in the blood factors that enter into the mechanism of hemostasis, is in prothrombin. We are fortunate that most hypoprothrombinemias are amenable to vitamin K therapy, whether the hypoprothrombinemia is due to lack of vitamin K in the diet (seldom the cause), poor absorption from the intestine or, almost as frequently, from various grades of inability of the liver to produce prothrombin. The capacity of the liver for prothrombin formation varies from one person to another; patients who display no change in their low prothrombin levels after taking 2 to 5 mgms. of vitamin K daily, may do so if the dose is raised to 50 to 100 mgms. In some instances of hypoprothrombinemia, after dicoumarol therapy, doses as high as 1000 mgms. intravenously have been required to raise the prothrombin.

Ascorbic acid is another drug useful in the control of bleeding. We make it a practice to give 100 to 200 mgms. of this vitamin daily, by mouth when we are fairly sure that there is good absorption of the drug (otherwise, parenterally) in patients having excessive hemorrhage even though we know that the primary cause of the hemorrhage is not a deficiency of vitamin C. When the bleeding has been severe or the destruction of vessels widespread, the demand by the tissues for this vitamin increases, and it is important to make sure that a deficiency is not contributing to aggravate the hemorrhage. Likewise, in hemorrhage due primarily to causes other than hypoprothrombinemia, it is wise to make sure that the patient has adequate supplements of vitamin K, because it has been our experience that sooner or later he is depleted of it. We have observed hemophilies who have been bleeding from a tooth socket for a week or longer develop low prothrombin levels; the hemorrhage is thereby rendered even more difficult to control, because another defect is superimposed on the one they already have. The usual dosage of menadione employed is 2 mgms. a day, by mouth or parenterally, in adults and children. Most infants with hemorrhagic disease and hypoprothrombinemia react promptly to 1 or 2 mgms. of vitamin K hypodermically, on the first and second days of life. After the first four or five days, when they begin to have and retain nourishment, they no longer need the vitamin.

Another use for the systemic coagulants, as we might call them, is in overcoming an excess of anticoagulants in the blood. There is much heparin being used these days and sometimes heparin administration runs out of control and hematuria or internal bleeding may develop. The simplest thing to do under these circumstances is just to stop the heparin. I don't remember any occasion when such a complication developed, that we didn't bring it promptly under control by simply stopping the heparin, if the heparin is being given intravenously, the method that we still think is best. A different situation arises when the heparin is being given intramuscularly, as is the fashion nowadays. There, one is depositing a large amount of the drug into the tissues, and while there, the heparin is, we might say, invulnerable to any anti-heparin substances that we might inject intravenously. If one must stop the action of intravenous heparin at once, one may use protamine sulfate, which is one of the basic proteins, binding heparin in a ratio of 2 to 1, and nullifying its anticoagulant properties in a matter of minutes. The injection of protamine may be given in a one per cent solution, one mgm of protamine per Kg. of body weight, mixed in 200 or 300 cc. of physiological salt solution, injected over a period of at least 10 minutes.

The situation in regard to the need for anti-heparin drugs has changed a little since the introduction of slowly absorbed heparins to be injected intra-muscularly. A patient may have received a large dose of heparin intramuscularly, and then begin to have bleeding from the genitourinary or the gastrointestinal tracts and the physician must hurry and try to stop the action of the injected heparin. Un-

der these circumstances, one may be forced to use one of the anti-heparin drugs (protamine) when, otherwise, there might be no need for it.

We have already referred to the use of vitamin K in bleeding secondary to dicoumarol therapy. Here large doses of vitamin K must be used preferably intravenously, and if a favorable result is not obvious within three or four hours, the dose (60-100 mgms) must be repeated. Unfortunately the prothrombin often does not rise for some time in spite of frequent injections; it may take as long as a week to do so. If the patient is susceptible to dicoumarol, as some patients with poor hepatic function are, it may take even longer and, meanwhile, blood must be given to supply prothrombin and maintain an adequate circulating blood volume. Dr. Link, the agricultural chemist, who is responsible for introducing dicoumarol, has brought out experimental evidence to back his assertion that excessive bleeding is rare in the severe hypoprothrombinemia from dicoumarol, provided ascorbic acid (100-200 mgms. daily) is given along with the dicoumarol.

Another measure that we have found of help in the control of excessive bleeding in menstruating women with leukemia and thrombocytopenia is testosterone, given in doses of 10 mgms. to as high as 50 mgms. a day. Testosterone has probably added six or eight months to the life expectancy of these patients who otherwise would have died earlier of uncontrollable hemorrhage. The action of testosterone does not make itself felt until approximately two weeks after it is started. The masculinizing effects, in our hands at least, on the few patients that we have tried, have not been conspicuous; a little hoarseness of the voice, atrophy of the breast, perhaps growth of hair on the upper lip, but certainly they have not been disfiguring. The undesirable effects have been more than outweighed by the benefits from the drug.

One word should be said regarding the use of protamine and toluidin blue in the control of hemorrhagic manifestations in leukemia. In our hands we have not had any success with the use of either one of these drugs for this purpose. There is fairly good assurance that this type of bleeding is principally due to these defects: 1) a thrombocytopenia which is present in about 75 per cent of the patients with acute leukemia and hemorrhagic manifestations. 2) hypoprothrombinemia, especially in the later stage when there is leukemic infiltration of the liver. 3) changes in the vessel walls (secondary to thrombosis of vasa vasorum). These defects when superimposed, as they often are, make it very difficult to control the hemorrhagic manifestations.

We have not found evidence that there is an increase of heparin in the blood of these patients. For that matter, we have not been satisfied that heparin exists in normal blood. There has been some misunderstanding regarding the original work that was done on this point. Most people that have heard about the use of anti-heparin substances in the control of bleeding in leukemia and thrombocytopenia, are under the impression that heparin had actually been demonstrated in the blood of these patients. That is not so. The work that was originally brought out[2] indicated that the blood of these patients had an increased susceptibility to heparin when compared to normal blood; that is, when their blood was taken and a given amount of heparin added to it, that amount of heparin had a greater effect on the leukemic blood than on normal blood. That is different from saying that heparin was actually found in increased amounts in leukemic blood. A simple explanation can be given to account for the difference in the response to heparin between normal and leukemic blood. Since platelets are the natural antagonists to heparin, when there is a thrombocytopenia, it takes much less heparin to produce a given anticoagulant effect than when platelets are plentiful.

There are many other drugs, of course, that have a systemic hemostatic effect. One of them is epinephrine, in small doses (10 to 100 micrograms subcutaneously for an adult weighing 60 kilos). Doses of this order, subcutaneously, have a hemostatic effect, particularly in the small capillaries, without an appreciable vasopressive influence. You are all familiar, of course, with the local effect of epinephrine. It is still one of our best hemostatic agents for local use.

And now we come to whole blood, plasma

and plasma fractions. Fresh whole blood remains one of our most effective hemostatic agents. By fresh is meant blood no older than 24 hours. It is a little disappointing to see a thrombocytopenic patient who is bleeding actively and receiving blood that is several days old. It is true that old blood is quite suitable to be given to patients who only need blood replacement, who are losing blood from lesions such as a peptic ulcer. Since the object then is to raise blood volume and maintain the circulation, it doesn't matter much whether the blood is a few days old. But when a patient has an impaired hemostatic mechanism (especially a thrombocytopenia) then the transfused blood should be as close to the state of blood in the donor's veins as possible. It is difficult, of course, to have all blood fresh, but the importance of having it for this type of patient has not been stressed sufficiently.

One of the plasma fractions, Cohn's fraction I, is useful in control of the bleeding episodes in hemophilia. Its potency is, however, difficult to standardize. The fraction also loses potency very rapidly sometimes, so that no manufacturer is willing to place an expiration date on these preparations. The fraction may be effective today *in vivo* and *in vitro* but in two or three weeks it may be almost inert. So one cannot depend on it. On the other hand, fresh normal plasma frozen within 24 hours after it is separated from the blood is very useful for this purpose. It maintains its potency for months after it is frozen and kept frozen. It should be thawed *rapidly* just before use.

Among the useful hemostatic agents for local application is thrombin. The preparations of thrombin now available are potent and stable. The synthetic structural dressings made from gelatine and oxicellulose are very helpful in checking bleeding, particularly that of the "oozing type" of from the lining of deep seated cavities difficult to reach with sutures. Once applied to the wound, the dressing forms a scaffold on which fibrin and platelets become anchored. Since it does not have to be removed, it is gradually incorporated into the healing surface.

One word about thromboplastin preparations. In our experience, the local use of thromboplastin as a hemostatic agent has been disappointing. This is partly because most thromboplastin preparations lose potency gradually on standing and partly because thromboplastin acts on the first phase of coagulation and requires an adequate content of prothrombin in the blood to be effective. So that in a patient with hypoprothrombinemia, the application of even a potent thromboplastin locally would not be of much benefit. When a local hemostatic agent is indicated, then thrombin should be used because it is potent, durable and effective, particularly in bleeding from capillaries and large, raw, granulating surfaces.

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### Discussion

Dr. E. L. Stambaugh (Lewes): Dr. Tocantins deserves a great deal of praise for his excellent presentation.

As surgeons, we are interested in blood as a hemostatic agent to supply deficiencies in the patient's circulation. Thirty years or more ago a transfusion was an operative procedure. Now it is part of the pre-operative and post-operative care of every patient undergoing major surgery.

The availability of blood makes hazardous operations less so. You know that blood can be transfused at a faster rate than it can be lost at operation.

A method, originating in Brunschwig's clinic, forces blood into the recipient at a rate of 500 cc's in 1½ to 3 minutes.

In our enthusiasm for things hemostatic, let us remember the warnings of the speaker as to the reactions and limitations. Excessive transfusion may give rise to anuria and uremia. Decapsulation of one kidney has been reported to be followed by immediate diuresis. Jaundice, following the use of pooled plasma, has been investigated and controlled.

Every surgeon is interested in gelfoam or oxidized cellulose. In these substances we have products of unusual hemostatic effect in stopping capillary oozing and hemorrhage at a time when ligatures and sutures are impractical.

Our enthusiasm for gelfoam has been somewhat dimmed in genito-urinary surgery. We

have used it in the prostatic bed after suprapubic prostatectomy. We no longer use it except in severe hemorrhage, our feeling being that urine does not tie in any too well with anything, whether absorbable or non-absorbable.

We recognize the importance of the use of vitamin K in pre-operative preparation of patients who are to have gall bladder surgery.

Again, let us thank Dr. Tocantins for his highly authoritative presentation.

Dr. J. F. Hynes (Wilmington): There is only one type of bleeding which I think was omitted and that is the patient who has persistent bleeding, particularly uterine bleeding, for which no cause can be found locally, except possibly a mild cervicitis. Such patients may bleed continuously although no blood dysplasia can be found. The only positive finding is capillary fragility as shown by a positive tourniquet test.

I recall only three cases, the first of which was some half dozen years ago, and that patient very nearly bled to death from severe and intractable hemorrhage. After total hysterectomy she bled from the vaginal vault in spite of repeated packing, suture ligature, fulguration, etc. The other two cases responded very well to treatment with rutin. I would appreciate hearing Dr. Tocantins' comments on the use of rutin to control bleeding in such cases.

Dr. S. W. Rennie (Wilmington): I would like to just ask one question. In the use of testosterone in these cases of leukemia with the vaginal bleeding that upsets the applecart for a short time have large doses and increasingly large doses of the estrogen, stilbesterol, been used?

At the present time we have been using stilbesterol to obliterate the menstrual cycle for a long period of time in cases of endometriosis, and these cases, of course, have their symptoms because of the pressure of the endometrial cysts. We believe, in the short time we have been using this and other men have been reporting this— we have had decrease in size of these small endometrial nodules.

We have at the present time a number of cases who have had amenorrhea for as long as eight, ten and thirteen months. The use of stilbesterol, giving as much as 150 milligrams per day, I think, would be perhaps the answer to these leukemic bleedings.

I am also interested in the large doses of vitamin K being used for dicumarol. With the use of dicumarol post-operatively, which we use every once in a while, when prothrombin time gets down around 20 and starts going lower, vitamin K has been of no help, perhaps because we haven't been giving big enough doses. But the use of fresh whole blood, even 100 cc., has helped us out a great deal. So we no longer use any vitamin K but give the whole blood and it straightens the situation out.

Dr. L. B. Flinn (Wilmington): In treating metastatic carcinoma of the breast with large doses of testosterone, it has been shown that a surprisingly large proportion develop polycythemia vera; whereas the remaining are not helped in their anemia. In using testosterone for the bleeding associated with leukemia and other dysplasias you have suggested, has there been any evidence of this type of reaction?

Dr. Tocantins: We have had some experience with the use of stilbesterol in attempting to control extra uterine bleeding. The case that comes to mind, because it happens to be the one we followed longest, was a girl chronically anemic who had intractable epistaxis which usually came at the time of menstruation. She had had many nasal operations and cauterizations, some of which were followed by granulation tissue, and more bleeding. We gave her stilbesterol under the guidance of an endocrinologist, and she had an excellent result. She stopped bleeding from the nose, and, of course, had no menstrual periods. The drug was given for about a year with the idea of favoring epithelialization of the nasal mucous membrane and permitting healing to progress to the point that, by the time we stopped the stilbesterol, which sooner or later we had to do because the girl was only 21 years old, she would have no bleeding. One difficulty with stilbesterol therapy in bleeding is that one has to stop it some time. When that is done, the patient usually starts bleeding.

We have not paid much attention to the masculinizing effects of testosterone, because

of the obvious urgency for its use in our patients and the fact that in our experience we have been able to get prompter results with testosterone therapy than we have with stilbesterol. The suggestion that stilbesterol be used in endometriosis seems appropriate because we all know how refractory that disorder is to treatment; the diminution in size of nodules with stilbesterol doses is interesting and a development worth following.

The use of whole blood in what might be called the vitamin K refractory hypoprothrombinemia of dicoumarol therapy, is, of course, definitely indicated and is one of our mainstays. It is not necessary that the blood be fresh for this particular purpose. It has been shown that prothrombin in "bank blood" remains intact for as long as three weeks and that plasma even of that duration, is useful for combatting hypoprothrombinemia following dicoumarol intoxication.

We were interested to hear concerning the polycythemic effect of testosterone. We must remember that this hormone is a potent protein anabolic agent. Come to think of it, we had the feeling all along that these leukemic and thrombocytopenic patients receiving testosterone were doing a little better, that is, they were requiring even less blood than they ordinarily would have required, making allowance for the fact that they were not having their menstrual periods. It is quite possible that there are other effects of testosterone that escape us.

# TREATMENT OF ACUTE POLIOMYELITIS
## With Emphasis on Muscle Relaxation and Nutrition
### Preliminary Report

George J. Boines, M. D.,*
Wilmington, Del.

It is proposed that poliomyelitis is essentially a medical problem. Competent and adequate medical management is a prerequisite to obtain results therapeutically profitable to the patient. This medical management must be augmented by conscientious nursing care and intelligent use of physiotherapy directed to the pathologic physiology in the muscles.

The treatment outlined in this report is employed at the Doris Memorial Unit of the Wilmington General Hospital. It is hoped that others may wish to try this method, especially the program relating to curare and nutrition.

The signs, symptoms, general medical and nursing care, and laboratory findings have been thoroughly dealt with in numerous publications [1-8] to which the reader may refer.

For treatment purposes, all the patients are classified as bulbar or spinal types. The former receive a specialized medical and nursing management which includes the use of oxygen tent, postural drainage, and parenteral feeding. The use of the respirator or tracheotomy are seldom found necessary, and hot packs are used only occasionally.

The protein requirements are taken care of by supplying a high protein intake [9, 10, 11] parenterally or orally. This diet is supplemented by a milk preparation containing a protein powder** and a special yeast. In addition, nucleic acid powder is given by mouth.

The "Metabolic Disturbances and Their Management in Poliomyelitis" will be discussed in a later publication by the author, in collaboration with Co-Tui, Peterson and Kakavas.

Curare, [12-20] (d-tubocurarine chloride solution, "Intocostrin," E. R. Squibb & Sons, 1 c.c. equals 3 mgs. or 20 units) is used as the main modality in relaxing muscles. It is administered as soon as the diagnosis is made. The initial dose is 0.45 units per kilo body weight, given at 8:00 a. m., 1:00 p. m. and 1:00 a. m. If no unusual reactions are noted the dose is raised to 0.9 units per kilo body weight on the following day. This constitutes the average dose needed for the majority of cases. In patients with severe muscle rigidity it may be increased to 1.5 units per kilo body weight, which is the maximum dose ever used by us. Within one hour after the curare is injected the physical therapists do the muscle stretching and muscle reeducation and instruct the patient how to carry out exercises during the day. The techniques we employ are those described by Ransahoff, and the exercises desscribed and illustrated by Billig and Loewendahl[21]. When relaxation has been achieved

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*Attending Chief, Communicable Diseases, Doris Memorial Unit, Wilmington General Hospital.

**Provimalt, the special yeast, and the nucleic acid (which is undepolymerized and made from non-autolized yeast) were made by Standard Brands, Inc. and made available by Homanic Brands.

(complete range of motion of all joints) the curare is discontinued and prostigmine is instituted[22] in order to increase the muscle strength. Myasthenia gravis is the only disease for which curare is contraindicated.

Personal assistance and walking aids are used in order to facilitate early ambulation. The patient is discharged when he is ambulatory and relaxed, and returns to the outpatient department for further muscle training, stretching, and functional rehabilitation.

### Summary

A total of 276 patients representing 35 bulbar, 112 paralytic, and 129 non-paralytic, were treated by the method outlined in this report. That the procedure of management was adequate and therapeutically profitable to most of the patients is manifested in the results: (1) full recovery in 222; (2) some muscle atrophy but no handicap 15; (3) ambulatory with some residual handicapping paralysis 30; (4) some handicapping paralysis but able to walk with braces 4; (5) handicapping paralysis but walk with braces and sticks 2; (6) 3 died. In groups 3, 4 and 5 more improvement is expected, as in our experience we have noted that improvement continues for four years.

In addition the following observations were made:

1. Safe and rapid relaxation of muscle rigidity.
2. Shorter hospitalization period.
3. The use of hot packs were reduced to a minor role by the effectiveness of curare.
4. Restoration of body nutrition and weight loss are accelerated with proteins.
5. Elimination of muscle pain, tenderness and rigidity.
6. Prevention of contractures and ankylosis of joints.
7. Good physical condition for any future corrective operations.
8. Earlier rehabilitation to former business or school life and satisfactory social adjustment.

### Comment

No claim is made that curare prevents or cures paralysis. It only relaxes the patient for muscle stretching and intensive exercises which are necessary for the restoration of the normal physiology to the muscles.

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## AMERICAN COLLEGE OF SURGEONS

Dr. Paul R. Hawley, Director of the American College of Surgeons, announces that color television, clinics, postgraduate courses, forums, symposia, panel discussions, official meetings, films, hospital conferences and exhibits will vie for the attention of the several thousand surgeons and hospital representatives who will attend the thirty-sixth Clinical Congress of the College in Boston, October 23 to 27. Headquarters will be at the Hotel Statler. Meetings will be held there and at the Copley-Plaza Hotel, Mechanics Hall, Symphony Hall, and the New England Mutual Hall. Dr. Thomas H. Lanman is chairman of the Boston Committee on Arrangements.

The national emergency will effect the character of the discussions at many of the sessions, and every effort is being made to have the Clinical Congress contribute its share to promoting the medical aspects of civilian defense and of care of the military forces, according to Dr. Hawley.

A new and exceptionally interesting feature of the program will be the holding of a series of postgraduate courses from Monday through

Friday mornings at the Boston City, Peter Bent Brigham, Children's, Massachusetts General, and Massachusetts Memorial hospitals. The subjects, to be presented at each hospital on different days, will be as follows: Nutrition, Vascular Diseases, Fractures of the Skull and Spine, Fractures of the Long Bones, and Pre- and Postoperative care.

Twenty-five Boston and vicinity hospitals will conduct clinics for the visiting surgeons every morning and afternoon during the Congress. Surgical procedures at Massachusetts General Hospital will be televised in color to Mechanics Hall every morning except Monday and every afternoon except Friday. Smith, Kline and French Laboratories of Philadelphia will furnish the television.

Thirteen Forums on Fundamental Surgical Problems in which the latest research findings will be presented, mainly by the younger surgeons, will be held Monday through Friday.

Symposia on Sports Injuries, Cancer, Trauma, and Graduate Training in Surgery, are planned — also a Clinico-pathological Conference.

Tuesday, Wednesday, and Thursday evenings, October 24-26, will be devoted to scientific sessions in general surgery, ophthalmology, and otorhinolaryngology. Afternoon panel discussions will also be held in these fields. On Friday afternoon there will be six surgical specialty panel discussions.

Conferences for hospital personnel will be held throughout the week under the direction of Dr. Malcolm T. MacEachern, Director Emeritus of the College.

Dr. Arthur W. Allen of Boston is chairman of the Board of Regents of the American College of Surgeons, which has a fellowship of 16,500 surgeons in the United States, Canada and other countries. The President is Dr. Frederick A. Coller of Ann Arbor. The President-elect, who will be installed at the Presidential Meeting on Monday evening, October 23, is Dr. Henry W. Cave of New York. The subject of Dr. Coller's Presidential Address will be "For the Benefit of the Patients."

Several hundred initiates will be received into the fellowship at the Convocation on the final evening, Friday, when the Fellowship Address will be given by the Director, Dr. Hawley, whose subject will be "Quo Vadimus?"

Other main addresses will be the Fifth Martin Memorial Lectnre at the Presidential Meeting by Professor Sir Geoffrey Jefferson of Manchester, England, on the subject, "The Balance of Life and Death in Intracranial Lesions," and the Fracture Oration on Wednesday evening by Dr. J. Huber Wagner of Pittsburgh.

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The care, the study and the teaching of tuberculous disease today should be the responsibility of the broadly trained medical internist-investigator in close association with the highly proficient, experienced chest surgeon as part of the larger problem of the better understanding and control of all cardio-pulmonary diseases involving the chest. Such an all-inclusive chest service should be an integral part of every large general hospital and medical teaching center, in the best interests of patients, physicians, undergraduate medical students and resident staff. This means medical center segregation in the future, rather than sanatorium isolation as in the past, with the tuberculous patient receiving equal acceptance and complete attention, including prompt recognition and specific treatment of his nontuberculous complications which ofttimes threaten his existence more seriously than does the tuberculosis, itself. Ohio Pub. Health, May, 1950, Charles A. Doan, M.D.

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Mass mobile unit x-ray surveys have imposed a new dual obligation upon the general practitioner. Determination of the activity or status of the frankly tuberculous lesion, and differentiation of pulmonary tuberculosis from other intrathoracic disease found in mobile x-ray surveys are now almost invariably responsibilities of the family doctor. Coupled with these duties, there still remains the necessity for early, accurate diagnosis of tuberculosis of any case seen in practice. Edwin J. Simons, M.D. and Edwin G. Knight, M.D., Journal-Lancet, April, 1950.

# Editorials

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Vol. 22 September, 1950 No. 9

### State Board of Health

Once more, for the twenty-first year, this issue of The Journal presents the activities of the Delaware State Board of Health. This feature of The Journal is one not emulated by many of the other state medical journals, but we find it profitable to publish this issue, because we believe it benefits the department, the profession and the public. This year it contains more articles than heretofore, several of them of unusual interest and value.

The Journal is happy to extend to Dr. Floyd I. Hudson, the Executive Secretary of the Board, and to all of his collaborators, its thanks for the excellent material which they have contributed.

### Program For 1950 Session

This issue also contains the official program for the 161st Annual Session of the Medical Society of Delaware. The program is more complete at this early date than it has been for several years. The list of exhibitors with descriptions of their exhibits is also complete, and represents the largest exhibit we have ever held outside of Wilmington.

Notice of the Annual Session has been printed on the front cover of The Journal in both the August and September issues, so no one can plead ignorance of the exact dates. We hope for a full and actively participating attendance. Let's go

### Register And Then — Vote

This is to remind those physicians who have not yet registered to vote at the November election to do so on October 21st, which is the last registration day. We have been informed that several physicians who registered did not vote at the last election, and that several didn't even take the trouble to register. In these times, how any educated man, such as a doctor of necessity must be, could allow his franchise to go by default, is beyond understanding. It is the duty of every citizen, regardless of party affiliation or partisan politics to do his duty as an American citizen. So again we say, register on October 21st and vote on November 7th. If our creeping socialism is to be stopped, it should be stopped by ballots instead of bullets.

### Warning To Nurses

A radio dispatch on August 10, 1950, quotes Shirley Temple as saying she is "going in training to become a nurse," adding "I want to be able to support myself when I am through with the movies." Poor Shirley doesn't know she is eating her white bread now, the million dollar kind, and she had better save a crust (a hundred grand) or two against the day when she is "through with the movies." Poor Shirley doesn't know that when a temperamental (?) artist is "through" with her art, as a rule she is "through," period. Caveat emptor!

In our humble opinion the nurses of today need not worry about this competition of tomorrow.

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**AMA dues next year (1951) are $25 including THE JOURNAL; Fellowship dues $2; total $27, or $10 less than in 1950!**

## MONDAY, OCTOBER 2, 1950

People's Church Community Hall

6:30 P. M.—MEETING OF THE COUNCIL

8:30 P. M.—MEETING OF THE HOUSE OF DELEGATES

## TUESDAY, OCTOBER 3, 1950

People's Church Community Hall

GENERAL MEETING

9:30 A. M.—INVOCATION

**Rev. William F. Edge**

Pastor, People's Congregational Church, Dover.

9:40 A. M.—ADDRESS OF WELCOME

**Hon. William J. Story**

Mayor of Dover

10:00 A. M.—REPORT OF HOUSE OF DELEGATES

**Andrew M. Gehret, M. D., Wilm.**

Secretary, Med. Soc. of Del.

10:15 A. M—COMBINED RADICAL RESECTION OF HYPOPHARYNX, LARYNX AND CERVICAL NODES, WITH ESOPHAGOPLASTY

**John F. Hynes, M. D., Wilmington**

Oncologist, Memorial Hospital

Heretofore carcinoma of the extrinsic larynx and/or hypopharynx have been considered inoperable. Laryngectomy has been recommended only for carcinoma confined to the intrinsic larynx. The end result of radiotherapy for "inoperable" lesions has been poor. A technique for en bloc resection of cancers involving larynx, pharynx, base of tongue or cervical esophagus combined with unilateral neck dissection and esophagoplasty in stages is described, with case reports. The swallowing functions can be restored.

Discussion: Drs. W. M. Pierson and H. S. Rafal.

11:00 A. M.—**Visit the Exhibits**

11:30 A. M.—ANTIBIOTIC THERAPY

**David A. Cooper, M. D., Phila.**

Associate Professor of Medicine, University of Pennsylvania.

Generous discussion of the present status of the various antibiotics and the management of infectious diseases.

Discussion: Drs. L. D. Phillips and G. A. Beatty.

12:10 P. M.—ANNOUNCEMENTS

12:20 P. M.—ADJOURNMENT

12:30 P. M.—LUNCHEON

People's Church—Banquet Hall

Members and Guests.

Guests of the Medical Society of Delaware.

2:00 P. M.—THE TREATMENT OF ANXIETY STATES

**Joseph Hughes, M. D., Phila.**

Professor of Psychiatry, Woman's Medical College of Pennsylvania.

The etiology of anxiety and its role in the production of psychosomatic symptoms will be discussed. The reactions of patients in terms of symptoms and the relation of symptom formation to conflictual problems will be outlined. The techniques for dealing with patient problems will also be discussed.

Discussion: Drs. A. L. Ingram, Jr., and M. A. Tarumianz.

2:40 P. M.—CORONARY ARTERY DISEASE

**William D. Stroud, M. D., Phila.**

Professor of Cardiology, University of Pennsylvania Graduate School of Medicine.

Most cases of early coronary disease can only be diagnosed from a careful history. The family history is most essential. If an acute occlusion is suspected, the patient should be treated for this condition in spite of a normal electrocardiogram. Of course the electrocardiogram usually becomes diagnostic within a few days, or at least within two or three weeks. The treatment of coronary insufficiency (angina of effort) with nitroglycerin, the xanthines, papaverin hydrochloride, and alcohol will be discussed. The treatment of acute coronary occlusion with myocardial infarction will also be outlined.

Discussion: Drs. E. R. Miller and J. R. Durham.

3:20 P. M.—**Visit the Exhibits**

3:50 P. M.—ANTICOAGULANT THERAPY IN ACUTE MYOCARDID INFARCTION, VENOUS THROMBOSIS AND PULMONARY EMBOLISM

**Joseph B. Vander Veer, M. D., Philadelphia**

Head of Cardiovascular Department, Pennsylvania Hospital.

The clinical use of anticoagulant therapy in hospital practice has established its value in reducing thromboembolic complications and mortality in acute myocardial infarction. Heparin and dicumarol therapy are now the treatment of choice in venous thrombosis. The occurrence of pulmonary embolism or even its probable diagnosis is an indication for immediate anticoagulant therapy.

Discussion: Drs. R. A. Mino and A. H. Clagett, Jr.

4:30 P. M.—NEUROPSYCHIATRIC EMERGENCIES

**Joseph C. Yaskin, M. D., Phila.**

Professor and Chairman, Department of Neurology, University of Pennsylvania Graduate School of Medicine.

As a branch of internal medicine, neuropsychiatry includes a number of conditions that should be diagnosed promptly for purposes of treatment. Chief among these are some infections of the nervous system, trauma, deficiency states, depressions, etc. The subject will be discussed from the standpoint of syndromes with the view of facilitating prompt diagnosis and treatment.

Discussion: Drs. H. S. Howard and M. A. Tarumianz.

5:10 P. M.—ANNOUNCEMENTS

5:15 P. M.—ADJOURNMENT

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Maple Dale Country Club

6:45 P. M.—RECEPTION

7:30 P. M.—ANNUAL BANQUET OF THE MEDICAL SOCIETY OF DELAWARE

Members and Auxiliary are invited to subscribe. Tickets from Dr. Joseph S. McDaniel, 229 S. State Street, Dover.

DRESS: Optional

Social hour to follow.

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## WEDNESDAY, OCTOBER 4, 1950

People's Church Community Hall

GENERAL MEETING

9:15 A. M.—COLOR MOVIE: ARTHRITIS AND RHEUMATISM FOUNDATION, NEW YORK.

Incidence, Economics, Facilities for Care, etc., of Arthritis. Case Histories of Cortisone and ACTH Treatments. Evaluation of Methods of Treatment.

9:40 A. M.—THE USE OF FAT IN A WEIGHT REDUCING DIET

**Alfred W. Pennington, M. D., Wilm.**

Medical Division, duPont Company

Summary of animal experimentation on dietary fats. Relation of dietary fats to arteriosclerosis and gall bladder disease. Detailed description of diet used for obesity, and of the handling of practical problems which arise in its administration.

Discussion: Drs. J. R. Durham and E. R. Miller.

10:20 A. M.—THE SURGICAL TREATMENT OF ULCERATIVE COLITIS

**L. Kraeer Ferguson, M. D., Phila.**

Professor of Surgery, Woman's Medical College of Pennsylvania and University of Pennsylvania Graduate School of Medicine.

Surgery has a definite place in the treatment of ulcerative colitis. This is indicated chiefly in the treatment of the complications of ulcerative colitis, namely, hemorrhage, obstruction, perforation, stricture formation, polyposis, carcinomatous degeneration and especially in the group of cases which might be termed intractable to medical care. Surgery in these patients permits a return to normal life with complete rehabilitation of the patients. Although the operations may be extensive, they can be performed with a low mortality. The type of surgery performed and the results in more than fifty cases will be discussed.

Discussion: Drs. O. A. James and L. J. Jones.

11:00 A. M.—**Visit the Exhibits**

11:30 A. M.—PRESIDENTIAL ADDRESS

**L. L. Fitchett, M. D., Milford.**

12:00 M — ELECTION OF PRESIDENT-ELECT (Sussex)

12:10 P. M.—ANNOUNCEMENTS

12:15 P. M.—ADJOURNMENT

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12:30 P. M.—LUNCHEON

People's Church—Banquet Hall

Members and Guests

Guests of the Kent County Medical Society.

2:00 P. M.—TUBERCULOSIS IN SMALL COMMUNITIES

**Rufus S. Reeves, M. D., Phila.**

Director of Public Health, City of Philadelphia.

Public health aspect of tuberculosis. Responsibility of authorities. Special tuberculosis problems in rural areas are: housing, nutrition, income, education, lack of health services. In setting up program one must add: mass chest x-ray, make available services of experts and general practioners at local health centers, public health nursing, beds, rehabilitation.

Discussion: Drs. G. A. Beatty and F. I. Hudson.

2:40 P. M.—REHABILITATION FOLLOWING ACUTE MYOCARDIAL INFARCTION

**William G. Leaman, Jr., M. D.,**

Professor and Head of Department of Medicine, Woman's Medical College of Pennsylvania.

Acute myocardial infarction is no longer a cause for despair and hopelessness. Over 60 per cent of these patients are able to return to work following recovery from their acute attack if rational, physiologic treatment is employed. The management of the residual symptoms during the post-infarction period and the various factors which contribute to a more favorable prognosis will be discussed.

Discussion: Drs. C. J. Prickett and A. H. Clagett, Jr.

3:20 P. M.—**Visit the Exhibits**

3:50 P. M.—THE BIOLOGY OF AGING

**Edward L. Bortz, M. D., Phila.**

Associate Professor of Medicine, University of Pennsylvania, Graduate School of Medicine.

Human life follows a definite biological pattern. Few individuals attain their optimum life span. Premature human deterioration too frequently results from conditions which may be prevented or delayed. Biological potentials of human life need to be emphasized. Expansion of the mature years is a major goal of science today.

Discussion: Drs. L. C. McGee and L. B. Flinn.

4:30 P. M.—PRESENT CONCEPT OF GLAUCOMA

**Alvin W. Howland, M. D., Phila.**

Associate in Ophthalmology, University of Pennsylvania Graduate School of Medicine.

Comparative analysis of glaucoma and other causes of blindness. Symptoms and types of glaucoma. Goniotomy in congenital type. Treatment, both medical and surgical, will be discussed.

Discussion: Drs. J. E. Marvil and W. O. LaMotte, Jr.

5:10 P. M.—ANNOUNCEMENTS

5:15 P. M.—ADJOURNMENT

## *IN MEMORIAM*

A. PARKER HITCHENS, Philadelphia
December 19, 1949

LOUIS S. PARSONS, Wilmington
February 15, 1950

STANLEY WORDEN, Dover
April 11, 1950

WILLIAM TOMLINSON, Seaford
May 31, 1950

SAMUEL C. RUMFORD, Wilmington
June 29, 1950

CARL B. SCULL, JR., Dover
July 25, 1950

JOHN W. BALLARD, New Castle
August 18, 1950

HARRY G. BUCKMASTER, Wilmington
September 7, 1950

## WOMAN'S AUXILIARY
## to the
## MEDICAL SOCIETY OF DELAWARE
## TUESDAY, OCTOBER 3, 1950

*President*, MRS. J. LELAND FOX, Seaford
*President-elect*, MRS. JOS. M. MESSICK, Wilm.
*Recording Sec'y*, MRS. A. M. GEHRET, Wilm.
*Corresp. Sec'y*, MRS. C. M. MOYER, Laurel
*Treas.*, MRS. S. W. RENNIE, Wilm.

PEOPLE'S CHURCH COMMUNITY HALL

10:30 A. M.—REGISTRATION AND LUNCHEON TICKETS

10:45 A. M.—Business Meeting

1. Call to Order.
2. Pledge of Loyalty.
3. Minutes of Last Meeting.
4. Reports.
5. Unfinished Business.
6. New Business.

12:15 P. M.—Adjournment.

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12:30 P. M.—Luncheon

Guest Speakers:

Lawrence L. Fitchett, M. D., Milford,
President, Medical Society of Delaware.

Joseph M. Messick, M. D., Wilmington,
Chairman, Advisory Committee, Woman's Auxiliary.

Mrs. Helen McDougall, Wilmington,
Hospital and Physicians' Relations Officer, Group Hospital Service, Wilmington.

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2:30 P. M.—Business Meeting

1. Unfinished Business.
2. Election of Officers.
3. Installation of Officers.
4. Social Hour.

4:30 P. M.—Adjournment

Until 5:30 P. M.—Visit the Exhibits.

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Maple Dale Country Club

6:45 P. M.—Reception

7:30 P. M.—Annual Banquet of the Medical Society of Delaware

Members and Auxiliary are invited to subscribe. Tickets from Dr. Joseph S. McDaniel, 229 S. State Street, Dover.

Dress: Optional
Social hour to follow.

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## TECHNICAL EXHIBITS

**Booths Nos. 1, 2 and 3**

E. I. duPont deNemours & Company
DuPont Building
Wilmington, Del.

DuPont Contributions to Medicine.

W. S. Armstrong, Jr.

**Booth No. 4**

George D. Hanby Co., Inc.
919 Market Street,
805 Shipley Street,
Wilmington, Del.

The exhibit will feature some of the latest types of conventional filing equipment by the Art Metal Construction Co., the Post Index and Magnadex systems of visible filing, steel office furniture by Art Metal Construction Co., and All Steel Equipment Co. Several pieces of waiting room equipment in aluminum and wood will also be featured, as well as specialized lighting equipment by Dazor.

J. R. Truitt E. A. Keeling, Jr.

**Booth No. 5**

Acousticon-Neumeyer Co.
832 Market Street
Wilmington, Del.

Acousticon .................................. Since 1902

World's First Electrical Hearing Aid is announcing an entirely new scientific and concealed method of regaining your hearing. A miniature masterpiece: 50 years ahead.

The Super X-Ear

A revolutionary achievement that acts like a human ear to bring you a new concept of hearing enjoyment. So tiny you can wear it as a brooch, tie clasp, or lapel button.

H. E. Neumeyer

**Booths Nos. 6 and 7**

American Cancer Society
Delaware Division
1324 Market Street,
Wilmington, Del.

Transparencies and illuminated exhibits on cancer research and gross pathology. Continuous motion pictures on early diagnosis of cancer.

Mrs. Nancy Kern Mrs. Betty Zannoni
Miss Marcellina Masella, R. N.
Mrs. Barbara Manley, R. N.
Dr. John F. King

**Booth No. 8**

General Limb and Brace Co.
1916 Market Street,
Wilmington, Del.

Manufacturers and professional fitters of prosthetic, orthopedic and surgical appliances.

Patrick Morgan John Holzem

**Booth No. 9**

Universal Products Corporation
Norristown, Pa.

Of special interest is the new "Surgeon's Fingalyte." You have often wished to have a light at the end of your finger tip. "Fingalyte" is just that.

Low wattage, and cool for trans-illumination. Attaches to inside of vaginal speculum or proctoscope. Headlight weighs only two ounces. All contained in a small case. The "Surgeon's X-L-Lyte" will also be demonstrated. This instrument has been in service for 20 years and over 75,000 in use. See it!

Charles H. Wolff

**Booth No. 10**

Charles Lentz & Sons
33 South 17th Street,
Philadelphia, Pa.

Our Exhibit will show a complete line of stainless steel instruments, physicians' bags, electrical diagnostic instruments, physiotherapy equipment manufactured by the Burdick Corporation, as well as, the Burdick EKG precision direct recording electrocardiograph apparatus.

LeVan Reber, Jr.

Booth No. 11

### Philip Morris & Co. Ltd., Inc.

100 Park Avenue,
New York, N. Y.

Philip Morris and Company will show the results of research on the irritant effects of cigarette smoke. These results show conclusively that Philip Morris are less irritating than other cigarettes. An interesting demonstration will be made on smokers at the exhibit which will show the difference in cigarettes.

Fred Zeller

Booth No. 12

### Doho Chemical Corporation

100 Varick Street,
New York, N. Y.

The Doho Chemical Corporation and its subsidiary, Mallon Chemical Corporation, makers of Auralgan, O-tos-mo-san and Rectalgan, are proud to announce their new nasal decongestant, Rhinalgan — a balanced formulation of two active chemic compounds that gives prolonged vasoconstriction. Used as a spray, in our patented Dohony Spray-O-Mizer (combination dropper and spray). Pleasant tasting, with no systemic effect (presser or respiratory), and can be safely used for infants and children. Our representatives will be happy to explain the merits of Rhinalgan and distribute samples of this innovation.

John R. Shaw

Booth No. 13

### John G. Merkel & Sons

1208 N. King Street,
Wilmington, Del.

We wish to express appreciation to our friends in Delaware who have supported us in our second year in business. We hope to give Delaware one of the best Physician Supply Companies on the East Coast.

John G. Merkel, Jr. John G. Merkel, 3rd.
L. E. McCandless E. J. France

Booth No. 14

### Eli Lilly and Company

Indianapolis, Ind.

Your Lilly medical service representative cordially invites you to visit the Lilly exhibit located in Booth No. 11. The display for 1950 features a presentation on the incidence and potential number of diabetics in America. The attending representatives will be pleased indeed to assist visiting physicians in every way possible.

J. A. Loughrey R. H. Miller

Booth No. 15

### Delaware Anti-Tuberculosis Society

1308 Delaware Avenue,
Wilmington, Del.
and

### Delaware State Board of Health

Dover, Del.

The Story of Tuberculosis in Delaware.

J. D. Niles, Jr. G. Taggart Evans

Booth No. 16

### Stethetron Sales Company

Wenonah, N. J.

Stethetron Sales Company demonstrate Council accepted electronic stethoscopes! Employ electronics to amplify the faintest cardiac murmur, fetal heart sound, or respiratory rale. Pocket size unit compensates for office noise level and likely hearing deficiencies at high and low frequencies. You are invited to determine whether we can improve your auscultation.

L. H. Lasell

Booth No. 17

### Mead Johnson & Company

Evansville, Ind.

Dextri-Maltose, Oleum Percomorphum, Pablum, Pabena, Olac and other Mead products used in infant nutrition will be on display at the Mead Johnson exhibit at your Medical Society of Delaware. Protenum, a new high protein product, will be displayed. Also, Lonalac, for low sodium diets. Our representatives at the exhibit will be glad to discuss with you the new improvements of Amigen and Amisets.

George B. Ealer George McLay

Booth No. 18

### Delaware Chapter American Red Cross

911 Delaware Avenue,
Wilmington, Del.

The exhibit will concern the health services of the Red Cross as promoted by the Delaware Chapter of the American Red Cross. It will feature the Safety Services and the Nursing Services.

Mrs. Ethel J. Myers
Mrs. Edith R. Kendall A. W. Rand

Booth No. 19

### U. S. Vitamin Corporation

250 E. 43rd Street,
New York, N. Y.

Exhibit demonstrates the greatest vitamin technicological advance of the present decade — "oil-in-water" multi-vitamin solutions. Includes Vi-Syneral Injectable which makes available for the first time in pharmaceutical history an aqueous parenteral multivitamin solution ready for immediate injection. Also, the original oral aqueous multi-vitamin formula, Vi-Syneral Vitamin Drops . . . since 1943.

Charles Grove

Booth No. 20

### Burroughs Wellcome & Co. (U.S.A.) Inc.

1 Searsdale Road,
Tuckahoe, N. Y.

'B. W. & Co.' will feature a completely **new type** anti-histaminic, 'Perazil' brand Chlorcyclizine Hydrochloride. 'Perazil' **differs chemically** in that it is a piperazine, rather than a conventional ethylenediamine compound, and a single dose provides 12 to 24 hour action. We will also feature 'Wellcome' brand Globin Insulin, the accepted intermediate-acting insulin; and Digoxin, for safe predictable digitalization.

K. P. Hoag E. M. Bennis

### Booth No. 21

Endo Products Corporation
8440 101st Street,
Richmond Hill, N. Y.

Vifort, aqueous (non-alcoholic) dispersion of both the "oil-soluble" and water-soluble vitamins, in small particle size, is one of Enlo's features. Mesopin offers homatropine methyl bromide (with or without phenobarbital) to relieve gastro-intestinal spasm while minimizing side-effects. Norodin presents d-methamphetamine hydrochloride, psychomotor stimulant and antidepressant with prompter onset, longer action and fewer side-effects.

J. L. Jackson M. C. Daniels
J. B. Morrow

### Booth No. 22

Gov. Bacon Health Center
Delaware City, Del.

A visualization of the contributions of the Governor Bacon Health Center toward the integration of the family unit as the basic strength of our American culture, manifested through a preventive psychiatric program which emphasizes the value of the individual to the group, and the value of the group to the individual.

Mrs. Alyce Kunz Mrs. Irene Nowland

### Booth No. 23

Walden Industries, Inc.
74 West 52nd Street,
New York, N. Y.

"QUICK-CLIX" is an unusually compact clinical photographic unit combining camera mount, lights and handy finger tip control. Designed for use with a single lens reflex camera, "QUICK-CLIX" allows you to see what you want and photograph exactly what you see. Ideal for close-up photography (as close as two inches), "QUICK-CLIX" is perfect for color and black and white clinical photography.

Dr. H. W. Walden Leonard Flomenhaft

### Booth No. 24

Delaware League for Planned Parenthood
110 E. 16th Street,
Wilmington, Del.

The Delaware League for Planned Parenthood is a charitable organization which maintains statewide clinics supplying medically supervised information, equipment and treatment to aid parents in planning their families and spacing their children. Control of conception and treatment of infertility promote the health and welfare of parent, child, and the community.

Mrs. Benjamin F. Burton, Jr.
Mrs. A. Randolph Holladay
Mrs. Robert N. Downs III
Mrs. S. Samuel Arsht
Mrs. Daniel O. Hastings, Jr.

### Booth No. 25

Similac Division
M. & R. Dietic Laboratories, Inc.
Columbus, Ohio

Our representatives for Similac and Cerevim will appreciate the opportunity to discuss with you the merits and use of our products in the care of infant and child nutrition.

D. F. Schlosser

### Booth No. 26

Ray-Mor Baking Company
Olive Street,
Salisbury, Md.

"Sweetheart" Baking Products.
They're good—you'll like them.
Try them with our compliments.

H. Jack Rayner Stanley Jones
Hobart Webster

### Booth No. 27

Pepsi-Cola Bottling Company
Box 869
Salisbury, Md.

Pepsi-Cola: a pure food product.
Dispensed with our compliments.

William E. Morgan Charles Bloodsworth
Max Kahn

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Little attention is paid to health, and it is often considered in the negative sense of absence of disease. It is challenging to current thought to point out that health and disease are not static entities but are phases of life . . . . Health, in a positive sense, consists in the capacity of the organism to maintain a balance in which it may be reasonably free of undue pain, discomfort, disability, or limitation of action including social capacity. John Romano, M.D., J.A.M.A., June 3, 1950.

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The final diagnosis in pulmonary tuberculosis rests upon the demonstration of the tubercle bacillus just as that of carcinoma of the lungs depends upon histologic proof. A reasonable certainty of predicted diagnosis can be obtained in about four fifths of the cases with only the usual x-ray examination such as posteroanterior, oblique or lateral films. Merrill C. Sosman, M.D., New England J. Med., June 1, 1950.

## OBITUARIES

### Carl B. Scull, Jr., M. D.

Dr. Carl B. Scull, Jr., president of the Medical Society of Delaware died of a heart attack on July 25, 1950 at his home in Dover at the age of 47.

Dr. Scull, former court-appointed Kent County physician, suffered a slight heart attack the previous night.

Dr. Scull was a native of Delaware, having been born at Wyoming, Nov. 4, 1902, a son of Carl B., Sr., and Rebecca Ennis Scull. He was a graduate of the University of Pennsylvania, A. B., 1924, and its Medical School in 1928. He served a year's interneship at Allegheny General Hospital, Pittsburgh, Pa.

He served with the Delaware National Guard during the years 1930-39, and with the Army from 1942 to 1946, participating in campaigns in Africa and Italy.

He was a member of the Kent County Draft Board in 1941, and again in 1948 and 1949. Active for some years in the Medical Society, of Delaware, he became its president in January, succeeding Dr. M. A. Tarumianz. He also held membership in the Kent County Medical Society and American Medical Association. He was a member of the Dover School Board and the Maple Dale Country Club. He was a Presbyterian and a Mason.

Dr. Scull is survived by his wife, the former Sara Karstetter whom he married in 1929, and two daughters, Rebecca Louise, 16, and Amelia Ann, 18. The latter, who entered Wheaton College at Norton, Mass., last fall, was touring Europe with a group of other students.

The deceased also leaves two sisters: Mrs. Carl E. Chatto, Wyoming, and Mrs. Louise Fitzgerald, Philadelphia

Funeral services, attended by a large delegation of members of the Kent County Medical Society and several officers of the Medical Society of Delaware, were held in the Dover Presbyterian Crurch on July 28th. Burial was made in the Protestant Episcopal Cemetery, Dover.

Dr. Scull was the second president of the Medical Society of Delaware to die in office since Dr. James Tilton, the first president of the organization, who died in 1822. Dr. Tilton served as president of the Medical Society from 1789 to 1822. The first president to die in office after Dr. Tilton's death was Dr. Henry F. Askew, of Wilmington who was president from 1851 to 1855, and again in 1875-76, who died in March 1876, though his term of office did not expire until June, 1876. Dr. Askew was vice-president of the A.M.A. in 1859, and president in 1867, the only Delaware doctor to achieve this national honor.

### William Tomlinson, M. D.

Dr. William Tomlinson, 80, for 45 years a practicing physician died at his home, Seaford, on May 31, 1950. He had retired four years ago.

Dr. Tomlinson received his degree of M.D. from the Medico-Chirurgical College of Philadelphia in 1902. He was a member of the Valley Medical Association, the Sussex County Medical Society, the Allegheny County Medical Association, Woodmen of America, Independent Order of Odd Fellows, and was formerly a trustee of McMaster's Methodist Church at Turtle Creek.

Dr. Tomlinson is survived by his wife, Mary Brown Tomlinson, two sons, William, of Seaford, and Nathaniel Tomlinson of Turtle Creek, and four grandchildren. Services were held at Seaford on June 3rd, with burial in the Seaford Cemetery.

### John W. Ballard, M. D.

Dr. John W. Ballard, of New Castle died on August 18, 1950, at the age of 62. He had suffered a heart attack on July 2nd.

A native of Logansport, Ind., Dr. Ballard was graduated from Valparaiso University, Valparaiso, Ind., A. B., 1910, and the University of Southern California Medical School in 1914. Following his graduation, he was employed as a physician with a mining company at Davis, W. Va.

His work was interrupted by World War I, during which he served as a captain in the Medical Corps.

Doctor Ballard began a private practice in Fairmont, W. Va., after his discharge, and then returned to Lafayette, Ind., where he joined the staff of the Veterans' Hospital. From Lafayette, he came to Wilmington 20 years ago to become a member of the staff at the Delaware State Hospital. He entered private practice in New Castle in 1942.

He is survived by his wife, Mrs. Florence K. Ballard, and a son, John W. Ballard, Jr., both of New Castle; a daughter, Mrs. Mary Ellen Timm of Gordon Heights; a grandson, Jeffrey Ballard Timm of Gordon Heights, and a brother, Dr. Charles A. Ballard of Logansport.

Dr. Ballard was a member of the Independent Order of Odd Fellows, the American Medical Association, Medical Society of Delaware, American Psychiatric Association, and the New Castle County Medical Society. He was a member of the New Castle Presbyterian Church.

Funeral services were held on August 23rd in New Castle. Interment was in Gracelawn Memorial Park, duPont Highway.

## BOOK REVIEWS

Sexual Deviations. By Louis S. London, M.D., Diplomate of the American Board of Psychiatry and Neurology, etc. and Frank S. Caprio, M.D., Member of the American Psychiatric Association, etc., with a Foreword by Nolan D. C. Lewis, M.D., Professor of Psychiatry, Columbia University. Pp. 702. Cloth. Price, $10.00. Washington, D. C.: Linacre Press, 1950.

The authors of this work adhere to the Freudian school, and emphasize that sexual devisions are not of themselves definite clinical entities but indicate some forms of basic neuroses, and are therefore amenable to treatment by psycho-analysis, with the expectation of cure in most cases. They use the case history method, the histories being written accurately and great detail.

This book will be of value for physicians, jurists, attorneys, social workers, educators, and laymen whose previous education and reading in this general direction has been inadequate.

Handbook of Materia Medica Toxicology and Pharmacology. By Forrest R. Davison, M. B. formerly Assistant Professor of Pharmacology, University of Arkansas. 4th Edition. Pp. 730, with 35 illustrations, four in color. Cloth. Price. $8.50. St. Louis: C. V. Mosby Company, 1949.

In the five years since the third edition Davison has added many new drugs, such as, aureomycin, polymynin, rutin, BAL, antihistominics, anti-malerials, etc. This new edition maintains the high standard of the previous ones and we again recommend the book as an excellent reference concerning the use of drugs.

Medical Management of Gastrointestinal disorders. By Garneyy Cheney, M. D., Clinical Professor of Medicine, Stamford University. Pp. 478. Cloth. Price, $6.75. Chicago: The Year Book Publishers Inc., 1950.

The approach to the subject which the author uses is that of sympathamology and is aimed primarily at the general practitioner. Comparatively small attention is paid to pathology, laboratory techniques, and differential clinical diagnosis, and these lacks limit the usefulness of the book somewhat. It is not complete enough to be used as a text book in medical books.

Clinical Biochemistry: By Abraham Cantarow, M. D., Professor of Biochemistry, Jefferson Medical College; and Max Trumper, Ph.D., Commander, H(S), USNR. Lecturer in Clinical Biochemistry and Basic Science Coordinator, Naval Medical School National Naval Medical Center, Bethesda, Maryland. 4th edition. Pp. 642, with 38 figures. Cloth. Price, $8.00. Philadelphia: W. B. Saunders Company, 1949.

This is the first edition of Canterow's since 1945. The first fifteen chapters deal with biochemistry and the last nineteen with the standpoint of physiology. The book concludes with an outline of chemical abnormalities in various disorders, which assists in the interpretation of the biochemistry findings. Controversial material is presented with certain reservations, and the book is completely up to date. As in the previous editions, we can recommend this book as trustworthy.

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Care of the Surgical Patient—Including Pathologic Physiology and Principles of Diagnosis and Treatment. By Jacob Fine, M. D., Professor of Surgery (at Beth Israel Hospital) Harvard Medical School. Pp. 544, with 40 figures. Cloth. Price, $8.00. Philadelphia: W. B. Saunders Company, 1949.

Dr. Fine, assisted by twenty-two collaborators, has presented a book that is not a text book of surgery but one on the basic principles of diagnosis and treatment of surgical conditions. Consequently, surgical technique is not discussed fully, but the pathology is accentuated. The book is up to date and authorative. The index is complete. We recommend the book to all surgeons, surgical interns, and medical students.

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Mitchell-Nelson's Textbook of Pediatrics. Edited by Waldo E. Nelson, M. D., Professor of Pediatrics, Temple University School of Medicine. With the collaboration of sixty-three contributors. 5th edition. Pp. 1658, with 426 illustrations, 19 in color. Cloth. Price, $12.50. Philadelphia: W. B. Saunders Company, 1950.

This fifth edition appears after a lapse of five years since the fourth, this time with the collaboration of sixty-three contributors, all of whom are recognized authorities in their respective fields. This book is more of an encyclopedia than the other books on pediatrics. It is completely up to date, and the illustrations clarify the text. It can be recommended without reservation.

The Merck Manual. 8th edition. Pp. 1592. Cloth. Price, $4.50 for Regulation edition: $5.00 for Thumb Indexed edition. Rahway, N. J.: Merck and Company, Inc. 1950.

Mercks' well known manual is welcome again. Part 1, containing 1,462 pages, discusses briefly various diseases and contains literally hundreds of prescriptions. Part 2, continuing for another 104 pages, contains routine immunization procedures, pre- and post-operative routines, office laboratory procedures, dilts, etc. etc. Part 3 is the index which contains 22 pages and apparently is complete. The manual is of hand size. The only objection that anyone could make is of the size of the type, and this objection is valid only for the older practioners who would be using the book less than the younger ones anyhow. Packed full of information, this is a handy reference which should be on the shelves of every practitioner.

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Postgraduate Gastroenterology — As presented in a course given under the sponsorship of the American College of Physicians in Philadelphia, December 1948. Edited by Henry L. Bockus, M. D., Professor of Gastroenterology, University of Pennsylvania Graduate School of Medicine. Pp. 670, with 258 figures. Cloth. Price, $10.00. Philadelphia: W. B. Saunders Company, 1950.

As indicated in the title, this volume represents lectures given at the University of Pennsylvania and naturally contains much material that has appeared in previous texts. These lectures cover esphogeal disorders, gastric secretions, and analysis, gastric neoplasms, recent contribution to the knowledge of peptic ulcer, application of neuropsychiatry to gastrointestinal problems, the pancreas, abdominal pain, the liver, intestinal obstruction, non-specific enteritis, jaundice and colonic diseases. The numerous illustrations are most helpful. The book merits a wide circle of readers.

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NET WT. 14½ OZ.
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LACTUM
EVAPORATED WHOLE MILK and DEXTRI-MALTOSE* FORMULA FOR INFANTS
Made from whole milk and Dextri Maltose,* with added vitamin D. Homogenized, evaporated, canned and sterilized
MEAD'S
MEAD JOHNSON & CO. EVANSVILLE, IND., U.S.A.
NET WT. 14½ OZ.
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EVAPORATED LOW FAT MILK and DEXTRI-MALTOSE* FORMULA FOR INFANTS
Made from whole milk, skim milk and Dextri-Maltose,* with added vitamin D. Homogenized, evaporated, canned and sterilized
MEAD'S
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Infant feeding formulas of cow's milk, water and Dextri-Maltose* have been prescribed for almost four decades, by two generations of physicians.

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# DELAWARE STATE MEDICAL JOURNAL

**Official Organ of the Medical Society of Delaware**
INCORPORATED 1789

VOLUME 22
NUMBER 10

OCTOBER, 1950

Per Copy 50c
Per Year, $4.00

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**Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly.** **Copyright, 1950, by the Medical Society of Delaware.**

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*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

VOLUME 22
NUMBER 10

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# COMMENTS ON THE MANAGEMENT OF HYPERTENSION*

Louis B. LaPlace, M. D.,**
Philadelphia, Pa.

## Introduction

The treatment of hypertension, except in a small percentage of cases, is palliative rather than curative. On the other hand, for the vast majority of patients, treatment can be considered relatively effective in the sense that appropriate measures wisely administered, can substantially prolong the duration of life and decrease the attendant disability.

Hypertension is a complex disorder in which a number of causative factors appear to be involved. It varies in severity from a benign condition to one which is rapidly fatal. There is no routine treatment suitable for all cases. The degree of therapeutic benefit obtained depends basically on individualization. Each case requires accurate and detailed analysis. This does not mean that every patient should be subjected to exhaustive laboratory studies. On the contrary, desirable although this may be for academic purposes, it is necessary only in a relatively small group. What is required, however, is that each patient be examined thoughtfully in the light of current concepts of the disease and with special reference to the possible causes of the hypertension, the presence of aggravating conditions, the degree of secondary cardiovascular changes, and the probable prognosis. Consideration should also be given to the psychological and socio-economic factors as well as to the disease itself. Each of these aspects of the case influences the choice of the therapeutic measures to be employed.

## Pathogenetic Aspects of Treatment

Treatment as it is currently advised is based not only on clinical experience but also on present concepts of the pathogenesis. Hypertension is generally defined as a persistent elevation of arterial pressure above the average normal limits of 150/90 millimeters of mercury. Increased systolic pressure alone is not considered to be true hypertension since it may result from a high pulse wave velocity (usually due to loss of elasticity of the aorta) or high cardiac stroke volume. Two other conditions, increased blood volume and increased blood viscosity, tend to elevate both systolic and diastolic pressures but are of relatively minor importance being seldom more than contributory factors.

The basic disorder in true hypertension is increased resistance to blood flow due to abnormal constriction of the arterioles. This is produced by nervous reflex influence, by humoral constrictor substances, and by organic changes in the vessels. Hypertension appears to be initiated primarily by one or another of these mechanisms but sooner or later all three tend to become involved. At first, the pressure is labile, increasing with excitement and physical activity, and subsiding to physiologic levels with rest. In this stage, it is often difficult to say exactly when the patient should be regarded as being actually hypertensive rather than simply a hyperreactor. As the etiologic influences persist, however, the pressure tends to remain elevated for progressively longer intervals and to return less easily to the normal range. Ultimately a stage is reached at which the pressure no longer returns to normal but remains fixed at high levels.

The elevation of pressure has two complicating effects: it increases the work of the heart and imposes excessive stress on the arterial system. The former favors the production of ventricular hypertrophy and dilatation and ultimate heart failure. The latter accelerates the development of arteriosclerosis with narrowing of the lumina of the arterioles and ultimate cerebral vascular disease, coronary disease and renal insufficiency. A vicious cycle in the pathogenesis of the hypertension is maintained by progressive arteriosclerosis in the kidneys.

---

*Read before the Medical Society of Delaware, Wilmington, October 12, 1949.

**Associate Professor of Medicine, Jefferson Medical College.

In a general way, there are four basic types of hypertension: neurogenic, arteriosclerotic, nephrogenic, and endocrene.

**Neurogenic Hypertension.** Elevation of blood pressure which occurs in the absence of organic causative disease is currently believed to have a psychogenic or neurogenic reflex basis. This is the common type of hypertension in the first half of life. The pressure tends to be relatively liable. The patient usually exhibits evidence of emotional and vasomotor instability and complains especially of headaches, dizziness, and fatigue. There is a common psychologic pattern of the "obsessive—compulsive" or "subnormal assertive" type. The patient who at first was simply a hyperreactor, ultimately develops a persistent elevation of blood pressure. It is likely that reflex constriction of the renal vessels becomes a contributory factor by the production of renal ischemia. In time, the peripheral arterioles become thickened and, as arteriosclerosis develops, the renal factor becomes increasingly important and the secondary cardiovascular complications are initiated. Neurogenic hpyertension tends to be relatively benign and may exist for fifteen to twenty years or more without serious ill-effect.

**Arteriosclerotic Hypertension.** Loss of elasticity and obstructive changes in the arterial system tend to cause an increase in systolic pressure and, when the cardiac output is increased, a rise in diastolic pressure as well. It is unlikely, however, to be a direct cause of persistent hypertension. On the other hand, arteriosclerotic narrowing of the renal vessels induces local ischemia with the abnormal production of vaso-pressor substances. The nature of this process is still obscure in spite of extensive experimental and clinical studies. To date, fifteen or more pressor substances which may be involved individually or in combination have been identified. For practical purposes, the situation may be summarized by the statement that some humoral vasopressor mechanism is evoked by conditions producing renal ischemia, that the degree of hypertensive response is, from a clinical standpoint, inconstant, and that no antagonist of the pressor substance suitable for therapy has yet been developed. Arteriosclerotic hypertension generally occurs in the older age group, has a relatively benign course, and terminates in cardiac failure or a cerebral hemorrhage. Symptoms, as a rule, are mild or absent and the development of a malignant phase is uncommon.

**Nephrogenic Hypertension.** Many forms of inflammatory and obstructive disease of the kidneys cause hypertension, possibly by the same mechanism as that of renal ischemia. Common examples include glomerulonephritis, pyleonephritis, polycystic kidney, and renal stone. Although occurring in all age groups, renal disease as a probable pathogenetic factor has been found to be present in approximately 25% of all cases of hypertension in young patients. Hypertension in a subject under forty years is therefore, an indication for thorough investigation of the kidneys. Renal hypertension is likely to have a relatively short course with few initial symptoms and to terminate in a malignant phase with uremia.

**Endocrine Hypertension.** About 10% of cases of hypertension are associated with some form of endocrine disease, the elevation of the blood pressure being attributed to disturbance of adrenal cortical function. Cushing's syndrome is commonly accompanied by hypertension as are a number of other pituitary disorders, especially the syndrome of obesity following pregnancy and various disturbances of the sex glands. A more clearly defined type is that of adrenal medullary tumor (pheochromocytoma) in which the hypertension is generally paroxysmal but often sustained. Endoctrine hypertension, except for pheochromocytoma, tends to be relatively benign and to persist for many years without conspicuous secondary cardiovascular changes.

**Mixed Forms of Hypertension.** The basic types of hypertension have been outlined above chiefly for the purpose of directing therapy toward the pathogenetic factors and as an aid to prognosis. As observed in practice, however, cases of hypertension are usually of a mixed type. A hyperreactive patient, for example, may gradually develop fixed hypertension, still without accompanying organic disease but ultimately, secondary arteriosclerosis adds the additional factor of renal ischemia. Endocrine and renal hypertension may likewise be essentially mild, but when accompanied by a sufficient nervous element, the blood pressure reaction becomes severe enough to hasten the development of cardiovascular complications. The same is true of a primarily arteriosclerotic hypertension, the severity of which may depend upon the degree of accompanying nervous influence. This may well be the reason why hypertension often tends to subside in advanced age and after the onset of some cardiovascular complication such as myocardial infarction; limitation of activity and reconciliation of the patient to a degree of invalidism reduce the increment of pressure elevation caused by the neurogenic factor.

### General Policy of Treatment

The general policy of treatment is based, as previously stated, on an evaluation of the factors involved in the hypertension, the severity of the disease, and the secondary complications. An initial procedure is to determine whether there is any coexistent disease, the symptoms of which may be mistakingly attributed to hypertension. Weakness, for example, may be caused by anemia rather than hypertension, breathlessness by asthma or emphysema, headaches by sinusitis, and precordial pain and palpitation by neurosis. The importance of this is self-evident since the type of treatment depends so largely on the severity of the hypertension. It is nevertheless a common error to overestimate the severity of hypertension because of symptoms which are due to other causes.

The severity of hypertension is not evaluated simply by the height of the blood pressure, especially a single determination. In cases having a renal pathogenesis, for example, the prognosis is usually much worse than in cases in which the blood pressure may be considerably higher but there is no evidence of associated organic disease. Regarding the blood pressure itself, some estimate should be made of its range of fluctuation which is usually much greater than appears from determinations made in the office. It is of value to record not only the highest level (made on first reading) but also the level reached after resting in the office for as long a period as may be practical. The more readings made under various circumstances (seated, standing, recumbent, after rest, etc.) the more accurate will be the impression gained not only of the range of fluctuation but also of the effect of treatment. In evaluating the advisability of sympathectomy, the blood pressure should be recorded after forty-eight hours of confinement to bed.

The value of treatment should not be judged simply by changes in blood pressure. The pressure may vary widely with little relationship to changes in symptoms or secondary complications. It may fall as cardiac complications develop and rise because heart function is improving; the latter event is certainly no cause for concern or indication for any change of treatment which is less favorable to the heart. A patient with benign hypertension of the neurogenic type and a good prognosis may be considered successfully treated if he is relieved of headaches and other disabling symptoms even though the blood pressure level is not significantly lowered. It is trite but nonetheless true to state that the disease should be treated, not the blood pressure.

Regarding treatment of the pathogenetic factors, it is very important to recognize those cases in which the essential cause can be removed. Outstanding among these is pheochromocytoma. The diagnosis is suggested by the occurrence of paroxysmal hypertension with dizziness, palpitation, and other manifestations of excessive adrenalin secretion. Two types of confirmatory tests are employed in which a positive reaction consists of (1) a rise of pressure on administration of an epherine secretion provocative such as histamine or mecholyl, and (2) a fall of pressure (when the pressure is elevated) on administration of an ephedrine antagonist such as benzodioxane or dibenamine. The possibility of preochromocytoma often evades suspicion when the blood pressure tends to remain elevated, as it does in long-standing cases, between attacks. The treatment is surgical removal of the tumor. Other conditions in which it may be possible to obtain a more or less complete cure include various types of unilateral renal disease. The diseased kidney should be removed at as early a stage as possible and before the hypertension becomes established by secondary changes. Nephrectomy for hypertension is probably indicated in approximately 1% of all cases. Finally, in cases of coarctation of the aorta, the hypertension which is the principle cause of fatal complications, is usually relieved by effective surgical treatment. The operation is safe, however, only in relatively young subjects.

For the renal causes of hypertension, the treatment, when possible, should be specific. The infection of pyelitis usually requires appropriate antibiotics. Renal pelvic or ureteral calculi should be removed and other obstructive lesions including prostatic hypertrophy should be corrected. Although some degree of hypertension usually persists afterward, the prognosis is always significantly improved. The nephrogenic hypertensive factor in both primary and arteriosclerotic disease of the kidneys is largely the basis for the use of the various restricted diets which have been advocated. Proponents of these diets believe that a favorable effect on renal metabolism with consequent reduction in the abnormal production of vasopressor substances is obtained by strict limitation of salt and protein. Their indication is determined by the circumstances of the individual case.

Hypertension associated with endocrine disease should be treated, insofar as possible, by any specific measures indicated to correct the particular disorder involved, pituitary irradiation, hormone replacement therapy, etc. Patients exhibiting the syndrome of obesity, menstrual irregularity, abnormal glucose tolerance curves, and evidence of hyperactivity of the adrenal cortical salt-retaining hormone, are benefited as a rule by a low sodium diet.

The neurogenic factor in hypertension is influenced by three general types of treatment, psychotherapy, sedation, and sympathectomy. There are probably no cases of hypertension in which some degree of psychotherapy is not indicated since a reflex mechanism is involved in the normal homeostatic maintenance of blood pressure and in the mild benign cases, it is the only treatment advisable. For more severe cases, appropriate sedation is necessary. Hypertension on a neurogenic basis alone is rarely, if ever, severe enough to warrant sympathectomy, at least prior to the onset of complications. Drugs which, like sympathectomy, interrupt the reflex pathways which control blood pressure, are still in an experimental stage.

Aside from the foregoing considerations, the type of treatment indicated is predominantly influenced by the severity of the disease. For the benign case in which the diastolic pressure averages 90-110 and the symptoms are not conspicuous, one wonders from the frequent instances of longevity observed in practice whether it would not be better if the patient knew nothing of his elevation of pressure. The author recalls a hypertensive patient who had no previous treatment and who died with a blood pressure of 220-120—the patient was, however, 105 years old. How much benefit many previous years of treatment would have afforded is doubtful. On the other hand, two measures are certainly helpful, the avoidance of nervous tension insofar as this can be accomplished, and weight reduction is obese patients. The latter procedure is likely to result in symptomatic improvement, especially when there is accompanying cardiovascular disease, rather than any substantial reduction of pressure. In cases of this type, it is usually permissible to use amphetamine preparations as an aid to weight reduction as the hypertensive effect of the drug, under the circumstances, is ordinarily negligible.

When hypertension is more severe, the diastolic pressure averaging 120-130, or there are distressing symptoms, drug therapy may be indicated in addition to the previous measures. Mild sedation such as phenobarbital, ¼ to ½ grain t.i.d., is the form of medication most likely to be helpful. Qualitative dietary restriction is seldom worthwhile but may be tried if symptoms are distressing. The same is true of hypotensive drugs such as the nitrites and thiocyante. Analgesics such as aspirin, are occasionally helpful in relieving symptoms. It should be borne in mind, however, that even in moderately severe hypertension, well-controlled studies have demonstrated that placebos are statistically as effective in lowering blood pressure and relieving symptoms as are any other forms of medication.

Severe hypertension with diastolic pressures consistently above 130-140 require more exacting measures. Sedation should be routine and the patient should have a substantial adjustment of his daily life to permit at least eight hours of rest at night and preferably an hour in the afternoon. It is probably wise to restrict sodium in the diet in all cases. One of the hypotensive drugs may be used in combination with the sedative. If capillary fragility is abnormal, as indicated by a tourniquet test, rutin and vitamin C may be given although their value is still controversial. Sleeping with the head of the bed elevated may be tried for the relief of headaches. In subjects under fifty years with adequate renal function, a sustained diastolic pressure of 140 or more is an indication for sympathectomy, as is also the occurrence of intractable symptoms.

Malignant hypertension which is characterized by severe retinitis, rapid vascular deterioration, and a relatively brief course, is generally an indication for sympathectomy if this is permitted by the patient's age and renal function. A few cases have been considerably improved by injections of pyrexial substances given over a period of several weeks. The patient should be treated radically by more or less complete confinement to bed, sedation, and a rice-fruit diet or some comparable modification of it involving restriction of salt and protein. Appropriate treatment may reduce the severity of symptoms and prolong the duration of life but the prognosis in this type of case remains inevitably poor, owing to the degree of vascular damage, especially in the kidneys, which is already present by the time the condition becomes manifested.

### Types of Treatment

**Psychotherapy.** Psychotherapy, applied deliberately or as an incidental feature of other measures, is probably more beneficial to the majority of patients, at least symptomatically, than any other therapeutic procedure. In relatively young patients with early labile hypertension of the neurogenic type, the correction of a personality defect by psychiatric techniques may be practically curative; in older subjects, the basic personality pattern is usually too fixed to warrant any striking improvement in this regard. Nevertheless, every effort should be made to give the patient a clear understanding of the relation of his blood pressure reaction to emotional tension, and to evoke his voluntary, not forced, psychologic adjustment to his environmental circumstances, social, financial, occupational, and domestic, as well as to the limitations of his illness. His attention should be directed toward improvement of his general state of health and diverted from his blood pressure readings, the fluctuations of which too often become a source of morbid concern. It is very significant how often the administration of placebos appears to lower blood pressure and relieve symptoms as effectively as the more active drugs. It is undoubtedly true moreover that the value of even such drastic treatments as sympathectomy and greatly restricted diets depends in some degree on their psychological impact and the cooperative attitude of the patient which they tend to enforce. Alternatively, most patients who vigorously resent dietary restriction are seldom substantially benefited by it.

**Restricted Activity.** Confinement to bed is indicated when hypertension has become relatively critical or severe complications have occurred. In milder cases, however, care should be taken to avoid restrictive activity to an unnecessary degree; so doing may be psychologically harmful, especially when it causes worrisome loss of income. In general, what the patient does is less important than how it is done. The development of a habit of avoiding hurry and of sitting down whenever possible is usually more helpful than rigid restrictions.

**Diet.** Reduction of excessive weight is often extremely effective in the relief of symptoms, especially when cardiovascular complications are present. So also is the avoidance of overeating at individual meals in patients of normal weight. The effect, like that of restricted physical activity, is a reduction of total body metabolism. Average blood pressure may not be substantially lowered but the total daily work of the cardiovascular system is certainly reduced. This procedure should be more or less routine except in the mildest cases. Some curtailment of fats is advisable in principle because of the tendency to arteriosclerosis. The influence of protein on hypertension is still controversial. Protein reduction seems unlikely to be worthwhile except in very severe cases or when indicated for renal insufficiency. Restriction of salt is generally regarded as unnecessary in mild cases but advisable for moderate to severe hypertension. Except in advanced stages of the disease, this need entail little more than avoidance of salty foods and omission of additional salt at table. Very severe or malignant hypertension, however, warrants a prescribed low sodium diet or the rice-fruit regime. The reported effects of such diets have varied in the experience of different investigators. In practice, their benefit is usually difficult to evaluate due to the inevitable progress of the disease, the concomitant use of other forms of treatment, or the patient's distaste for the diet. Sodium deficiency tends to precipitate uremia by interfering with glomerular filtration and great care should be exercised to prevent this occurrence when rigid restriction of sodium is continued for any lengthy period, especially as its development may be mistakenly attributed to the natural course of the disease.

**Drugs.** It is significant that most hypertensive patients who appear to be benefited by some particular form of medication are later found to do just as well when the drug is discontinued. Much of the improvement attributed to specific drugs in individual cases is actually the result of spontaneous variations in the severity of the disease and to psychotherapeutic effects.

Sedation is the most generally applicable form of medication and certainly the most commonly used. Although indicated in severe cases, the custom of prescribing a sedative routinely three or four times daily for an indefinite period to patients who have a life expectancy of ten years or more is a matter of very questionable wisdom.

Nitrites are second only to the sedatives in popularity. In controlled studies of hypertensive patients under basal conditions, their effect on the blood pressure level in the majority of cases is negligible. It is quite possible, however, that they have a substantial effect under ambulatory conditions although this is obviously difficult to evaluate. It is also possible that they exert a beneficial action by altering the distribution of blood in the body for even when they fail to lower blood pressure, patients often have symptomatic improvement following their administration. Like other medication, their continued use in mild cases over a period of many years seems scarcely justified.

Potassium thiocyanate was reported some years ago to be the most effective drug available in the treatment of hypertension. Today, its usefulness is generally regarded as limited to only a small percentage of cases. In some patients, it does exert a substantial hypotensive action but its chief value is probably in the production of symptomatic relief, especially headaches, and this effect may occur even when the blood pressure level is unchanged. The chief disadvantage of the drug is its toxicity and continued administration is dangerous unless weekly determinations are made of the blood pressure level which should not be allowed to exceed eight to twelve mg. per cent.

Veratrum viride has had a revival of popularity as a hypotensive drug, having recently become available in the form of its purified alkaloids. Reports on its effectiveness have varied from favorable in 75% of cases to no results better than those obtained by placebos. Unfortunately, the therapeutically effective dose is very close to or exceeds the toxic level. If and when its toxicity can be adequately overcome by further purification, this drug may prove a very satisfactory preparation for general use.

Xanthine derivatives, especially aminophyllin, have enjoyed very prevalent usage in the routine treatment of hypertension, largely for theoretical reasons since objective evidence of their effect in clinical practice is scarcely appreciable. Their chief merit is the fact that although their beneficial renal stimulant and vasodilator action is minimal, they exert no significant ill-effect in therapeutic dosage.

Rutin, ascorbic acid, and related preparations which decrease abnormal capillary fragility have at least a theoretical indication when there is evidence of this tendency as demonstrated by a standard tourniquet test. Their administration is intended chiefly to prevent cerebral hemorrhage and other complications likely to be favored by rupture or leakage of small vessels. Their benefit is entirely prophylactic, has been extremely difficult to evaluate, and is still largely controversial, opinion being at present much less favorable than a few years ago.

Sympatholytic drugs in various forms have received intensive study because of the possibility that a suitable agent of this type may be capable of effecting what amounts to a medical sympathectomy. Preparations which are best known of this group are tetraethylammonium chloride, dihydroergocormine, dibenamine, and pentaquine. They act centrally or peripherally to block sympathetic reflexes with consequent reduction of blood pressure, especially in the standing position. None has been found satisfactory for clinical use due to either toxicity or too brief duration of effect. Further investigation of related compounds, however, may well develop one which overcomes these defects.

Sympathectomy involves the surgical removal of the lower thoracic and lumbar sympathetic chains bilaterally. The operation is not standardized and is modified according to the circumstances of the individual case such as the coexistence of coronary disease. It is far too drastic a procedure to be used except in those cases in which the indications are reasonably reliable. The usual dilemma regarding the selection of patients is that the earlier the stage of the disease at which the operation is performed, the better will be the results, but it is only in the very severe cases and after failure of medical therapy that so radical a form of treatment appears justified. Although there is no general agreement as to the exact indications, the operation should certainly be considered in the following types of case: (1) severe hypertension in which the diastolic pressure remains elevated above 140 mm. Hg. after forty-eight hours of bed rest, and (2) when there is threatened blindness, intractable headaches, recurrent cerebral accidents, or similar complications. There are two principle contraindications: (1) the presence of a considerable degree of arteriosclerosis, and (2) any more than minimal impairment of renal function. Patients over fifty years of age are usually unsuitable for operation and definitely good results are generally far more frequent in the younger age group. It has been stated that of all cases of hypertension encountered in general practice, sympathectomy is probably justifiable in approximately 3 per cent.

After operation the degree of hypotensive effect varies widely between different patients. Almost all have at least a marked fall of pressure on standing, accompanied by tachycardia and faintness, which persists for several months and is often very troublesome. It may be counteracted by the use of a tight abdominal binder and elastic stockings. One noteworthy feature of the operation is the fact that patients are often symptomatically benefited and exhibit improvement in the eye grounds and reversal of the electrocardiographic pattern toward normal in spite of minimal changes in the blood pressure level.

Everything considered, sympathectomy may be regarded for the present as a form of treatment to be used when the prognosis is otherwise definitely hopeless and the age and renal function of the patient are not likely to prevent a sufficiently beneficial effect.

**Cardiovascular Therapy.** Heart failure may be treated by routine procedures, generally irrespective of the hypertension. Digitalis should never be withheld because of the belief that it might raise the blood pressure as it has no such vasopressor action. For acute pulmonary adema, venesection may be indicated; occasionally it tends to lower the arterial pressure as an incidental effect of the relief of venous congestion. Venesection should be restricted, however, to plethoric patients and is likely to have an adverse effect when there is any substantial degree of anemia. The question often arises as to whether digitalis, given before the appearance of cardiac failure, has any prophylactic effect in delaying this complication. No categorical answer is justified but it is certainly permissible and usually helpful to give digitalis in the stage when hypertensive left ventricular weakness is first manifested by breathlessness and before edema has appeared.

## Summary

A number of pathogenic factors are combined in the production of hypertension and treatment should be directed toward each of these factors insofar as this is indicated by the severity of the disease, or possible from a practical standpoint. It is important not to overtreat the milder cases. In mild to moderate hypertension, psychotherapy and moderation of physical and nervous stress are still the most beneficial of the available forms of treatment. The development of newer drugs is promising but the success of the presently available agents is very limited. For severe cases, sodium restriction is generally indicated and, in a relatively small group, sympathectomy should be performed.

1930 *Chestnut Street*

### DISCUSSION

DR. R. C. DURHAM: (Wilmington) Dr. Laplace has given us a very excellent and concise picture of hypertension. As he intimated, forecasting the inevitable development of primary hypertension as a disabling disease is not possible at the present time, and any one of us who has had a chance to follow some of these hypertensive patients for 15-20 years is aware of the benign course of the syndrome in some cases, permitting normal or almost normal life span.

I think he pointed out the difficulty of evaluating the medical treatment of hypertension as a control for the surgically treated group. I would like to mention the work of Hans Selye, who has what he terms a non-specific adaptation syndrome as an explanation of hypertensive disease. He believes that the adrenals and pituitary are involved in the production of hypertension, and his work on animals seems to confirm this theory.

I think that I should mention two of Page's cases, in which total adrenalectomy was performed and the patients kept alive by substitutional therapy with a cure of their hypertension. This work, of course, needs further confirmation, but I think that it is one of the most promising approaches to the problem.

DR. CHARLES LEVY: (Wilmington) Dr. Tarumians, Dr. Laplace, Fellow Members of the State Society and Guests: Having heard this most interesting paper this morning, I frankly feel that it would have been a privilege and a pleasure if I had had ample time to thoroughly study Dr. Laplace's paper so as to adequately discuss it at this time.

Hypertension has been described as a symptom, or, should I say, a sign of a disease or group of diseases. Sometimes it is truly a sign, as when the patient rushes to your office, having had her blood pressure taken on the boardwalk in Atlantic City. The sign there coaxed her into having her blood pressure taken, and the first thing you know she is in your office to be treated for the hypertension.

The principal point is to recognize and understand Dr. Laplace's plea. I think it is truly palpable that we must as early as possible find out the cause, if one is present, for the hypertension. In this way many cases can be adequately treated and some even cured.

In the summary of the medical management or treatment of hypertension, as Dr. Laplace mentioned, we are down to more or less three main categories. One is the regulation of the patient's life. That is, he must be willing to slow down, take things gradually, and adjust his life to his condition. Second, the dietary treatment which in every case means weight reduction where indicated. I haven't had good results with the rice diet, except in one patient who went to Duke to be studied there by Dr. Kempner. This patient explains to me that he feels that all the patients at Duke consider the situation more or less as a kind of religion. They won't take a thing to eat but rice, whether they are at home or away, and I will say that he is doing quite well.

One statement that Dr. Laplace made, namely, reducing metabolic activity by reducing body weight, or the intake of diet so as to reduce weight, reminds me of a statement which was made at the AMA convention in Chicago in 1948 by Dr. S. K. Robinson of Chicago, who stated — and I concur in his thought — that no examination for hypertension is complete without a basal metabolic rate. I say this because I have noted excellent relief of many of the symptoms and progress in hypertensive individuals with the use of Propylthiouracil, taking proper precautions in the use of that drug.

I might also state that I have used the thiocyanates quite a bit. I do recall one interesting episode in which a patient with a metabolic rate of about plus 27, who also had a blood pressure maintained at about 180 over 110, who was apparently relieved of both conditions with thiocyanates, and after about two months' therapy, his basal was plus 6.

This of course was due to the anti-thyroid effect of the thiocyanates.

Dr. Laplace: I simply want to thank my discussants, and I wish that the time were longer to amplify some of the statements I made which need amplification, such as the fact that these reduced protein and reduced sodium diets are not without a certain danger and should not be used indiscriminately. Many patients develop uremia as a result of the sodium depletion. Those comments and reservations of that sort could be made with regard to all the treatments mentioned.

I do want to emphasize again, in passing, the important psychiatric aspects of the disease, and I am perfectly certain that the reason for the great success of the rice diet and almost any new treatment that comes out is partly due to the enthusiasm of the patient for it. If the patient can be made to cooperate with enthusiasm his sense of well being improves, and that in itself is capable of lowering his blood pressure a little, and certainly it makes him better, makes him feel better, which is, after all, the objective of our treatment.

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# THE MANAGEMENT OF POTASSIUM DISTURBANCES IN A GENERAL HOSPITAL*

J. Richard Durham**, M. D.,
and
William C. Blase,** M. D.
Wilmington, Del.

At the present time the physiology of body fluids is being re-evaluated in the light of newer concepts of electrolyte disturbance in disease. Previously, emphasis was placed primarily on acid-base balance and on salt disturbance without much thought being given to other electrolytes. Now sodium and potassium levels in the blood in certain diseases are receiving considerable attention. We are concerned here with potassium.

Table 1 lists those conditions in which potassium disturbance is most frequently met.

The diagnosis of potassium disturbance will depend first on an awareness of the conditions in which it is likely to occur, secondly, observation of the patient for the mascular weakness and atonicity, thirdly, serial EKGs as necessary, and lastly blood levels. At the present, flame photometers are not available in the laboratories of general hospitals. At the Memorial Hospital in Wilmington we were fortunate enough to obtain sodium and potassium levels at the laboratories of the duPont Company, although these readings were only made once or twice a week and hence served merely as a check on treatment already decided upon by clinical and electrocardiographic study.

TABLE 1

Diseases which may be associated with Potassium disturbances.

| HYPERPOTASSEMIA | HYPOPOTASSEMIA |
|---|---|
| Uremia (with anuria or oliguria) | Diabetic acidosis |
| Addison's Disease (crisis) | Intestinal obstruction with gastric alkalosis |
| Crush syndrome | Diarrhea with fluid loss |
| Initial phase of diabetic acidosis | Familial Periodic Paralysis |
| | Excessive DOCA<br>Cushing's syndrome |
| | Administration of large amounts of Glucose/NS |

Table 2 lists the table of normal values in milliequivalents and also in milligrams per cent. It is desirable to express values in milliequivalents rather than milligrams per cent, since the use of the former unit permits an expression of the amount of available acid or base. For example, a solution containing 23 mgm. of sodium per liter would contain 1 mEq. of this element, but a solution containing 12 mgm. of magnesium would have the same mEq. value. Table 3. This relationship would not be apparent if the substances were expressed in milligrams per cent.

TABLE 2

Table of normals in milliequivalents (meq) and also in miligrams (mgm) per cent

| Ion | Meq | Average | Mgm/100cc | Average |
|---|---|---|---|---|
| Na | 137-147 | 143 | 310-340 | 320 |
| K | 4.1-5.6 | 5.1 | 18-22 | 20 |
| Chloride (plasma) | 96-105 | 100 | 340-370<br>As pure chloride | 350 |
| | | | 560-620<br>As sodium chloride | 590 |

Of the conditions in which hypokalemia is found diabetic acidosis is the most frequent. It has been shown that the potassium levels may be normal or above normal in the pre-

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*Presented at the Regional Meeting of the American College of Physicians, Johns Hopkins Hospital, Baltimore, February 25, 1950.

**Attending Cardiologist and Chief Medical Resident respectively, Memorial Hospital.

TABLE 3

$$\text{MEQ} = \frac{\text{mgm/liter}}{\text{atomic wt.}} \text{ x valence} = \frac{23}{23} \text{x } 1 = 1 \text{ meq}$$

$$\text{MEQ} = \frac{\text{mgm/liter}}{\text{atomic wt.}} \text{ x valence} = \frac{12}{24} \text{x } 2 = 1 \text{ meq}$$

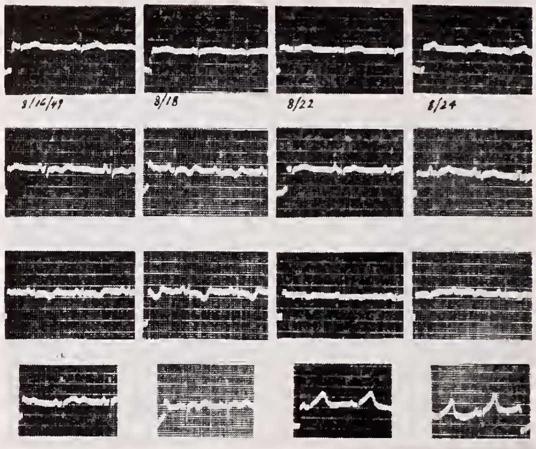
Equations which illustrate the use of milliequivalents. 23mgm. of sodium per liter (upper equation), and 12mgm. of magnesium (lower equation) have same mEq value.

treatment stage of diabetic acidosis. This is not to say that potassium loss has not already occurred since in potassium economy two stages are recognized: first, a prodromal stage marked by a loss of total body potassium with normal or elevated serum potassium and low intracellular potassium, and second, a drop in the serum potassium with total body potassium remaining low. It should also be remembered that potassium loss during acidosis is increased by vomiting since gastric juices contain 10 to 13 mEq. of potassium per liter. The drop in serum potassium occurs two to eighteen hours following the administration of insulin. The administration of fluids, especially glucose, seems to augment hypokalemia. Since the kidneys do not tend to conserve the potassium ion as they do sodium, potassium is continuously lost in the urine, especially in diabetic acidosis with glycosuria and high urinary output. Hence, in diabetic acidosis, the seeming improvement in blood sugar and acidosis may be marked by a worsening of the patient from a clinical viewpoint, due to hypokalemia. It is our practice to obtain a control EKG on all patients admitted with diabetic acidosis, and serum is drawn for sodium and potassium levels in addition to the usual laboratory studies in this disease.

C. M., a 32-year-old white male, was admitted on Aug. 13, 1949 with a three day history of nausea and vomiting. He was a known diabetic and on three occasions during the previous two weeks was treated for insulin shock with large amounts of intravenous glucose. On admission he was not in acidosis but did exhibit acetonuria. His $CO_2$ combining power was 77 volumes per 100cc., blood sugar 280 mgm., and plasma chlorides 520 mgm. He was treated with normal saline, 5 per cent glucose in normal saline, and regular insulin over a period of three days. During this time, vomiting continued but was not excessive; a Levine tube was passed for a twenty-four hour period.

An EKG (see Fig. 1) on Aug. 16, 1949, showed evidence of hypokalemia. During the next twenty-four hours, he received 12 gm. of potassium chloride intravenously, but an EKG on Aug. 18 showed further evidence of hypokalemia. No loss of gastric secretions occurred during this time, but the patient continued to receive intravenous glucose and insulin because of poor oral intake. Between Aug. 18 and Aug. 22 he received 24 gm. of potassium chloride by mouth, and an EKG on Aug. 22 showed evidence of an increase in the potassium level. During the next two days he received 16 gm. of potassium orally, and the last tracing on Aug. 24 showed no further evidence of potassium disturbance. Fig. 2 shows the chest leads taken on Aug. 18.

FIG. 1

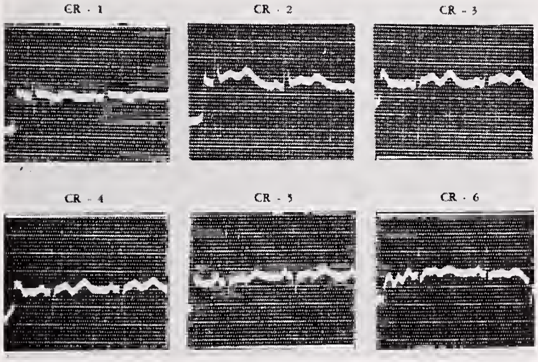


C. M., age 32, diabetic. Serial changes during hypokalemia and recovery. See text.

It should be noted that this patient was not in acidosis despite the EKG evidence of hypokalemia. We believe that the previous treatment for insulin shock with large amounts of glucose, plus the hospital treatment of hyperglycemia by saline and insulin combined with some loss of gastric secretion were responsible for his decreased serum potassium. Therapeutic control was maintained by serial electrocardiograms, as no potassium blood levels were obtained.

Probably the second most frequent group of conditions in which clinical suspicion of hypokalemia should be entertained includes intestinal obstruction with prolonged vomiting, sometimes referred to as gastric alkalosis. Our surgical friends are now aware of the danger of continued Wangensteen or Miller-Abbott tube suction as an aggravating or sole factor in the production of hypokalemia through continuous washing-out of gastric and intestinal fluids. This is particularly true when the patient is permitted to drink unlimited quantities of fluid which of course return via the tube. The administration of glucose and saline without potassium may further lower the blood level.

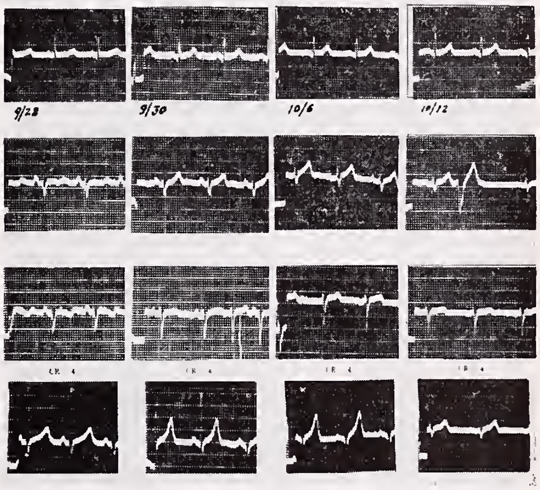
FIG. 2



C. M., age 32. Chest leads during hypokalemia. See text.

G. H., a 62-year-old white male, was admitted Sept. 20, 1949, with a four day history of epigastric pain and vomiting. He had had ulcer symptoms for the past four years with a duodenal ulcer proven by x-ray. The admission diagnosis was duodenal ulcer with stenosis. On the day after admission, he suddenly developed acute epigastric pain; a laparotomy revealed a large perforated ulcer on the anterior wall of the duodenum. During this time the patient was treated with continuous gastric suction through a Levine tube plus daily intravenous infusions of glucose in normal saline and water. Two gm. of potassium chloride were added to each infusion so that the patient received about 4 gm. daily. On Sept. 28, with the $CO_2$ combining power 88 volumes per 100cc. and plasma chlorides 480 mgm., the possibility of gastric alkalosis was entertained. His potassium chloride was increased so that between Sept. 24 and Sept. 28 he received 28 gm. intravenously. Despite this, however, an EKG on Sept. 28 (see Fig. 3) showed evidence of hypokalemia. During the next thirty-six hours he received 16 gm. of potassium orally, and his EKG on Sept. 30 showed evidence of improvement in serum potassium. Between Sept. 30 and Oct. 6, the stomach was levaged twice daily, and he received a total of 35 gm. of potassium chloride. The EKG on Oct. 6 revealed further changes indicative of increased serum potassium, but between Oct. 12 and Oct. 17, 5 gm. of potassium chloride were given because of reinstitution of the daily gastric lavage. Following a subtotal gastrectomy on Oct. 18, the patient developed auricular fibrillation which was controlled with quinidine; no potassium was given during this period. The original high $CO_2$ combining power and low chlorides gradually improved until on Oct. 21 the $CO_2$ combining power was 61.4 volumes per cent and the chlorides 540 mgm.

FIG. 3



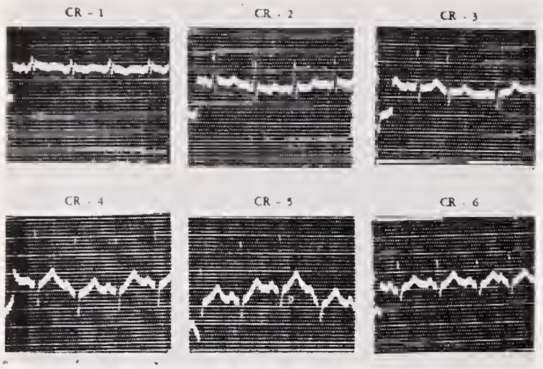
G. H., age 62, gastric alkalosis. Serial tracing during hypokalemia and recovery. See text.

Fig. 4 illustrates the chest leads during hypokalemia while Fig. 5 shows the return to a normal pattern following therapy.

We feel that this case represents so-called gastric alkalosis and illustrates the large amounts of potassium that can be lost through gastric secretions when vomiting and/or gastric lavage occurs. Again potassium therapy was controlled by EKG, since no serum potassium levels were obtained.

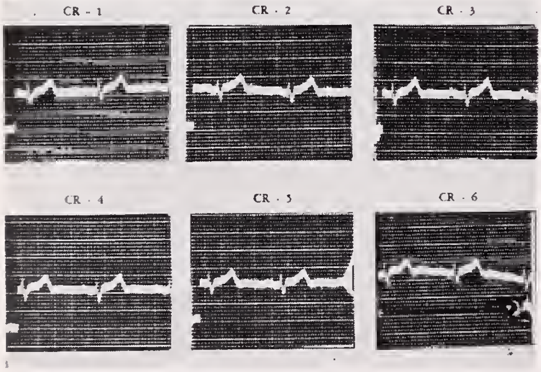
One of the less frequent examples of hypokalemia seen in our practice is malnutrition. The following case illustrates this: F. M., a 40-year-old white male, was admitted Oct. 5. 1949, with a history of dysphagia and weight loss of 45 pounds over a six month period. Physical examination showed evidence of malnutrition with extreme emaciation; his weight was 85 pounds. EKG on October 6 (see Fig. 6) showed evidence of hypokalemia, and between October 6 and October 11 he received a total of 4 gm. of potassium chloride intravenously and 45 gm. orally. The second tracing on October 11 showed the expected changes compatible with an increased serum potassium. No digitalis was received; blood chlorides on admission were 480 mgm. and rose to 500 mgm. on October 11.

FIG. 4



G. H., age 62, gastric alkalosis. Chest leads during hypokalemia. See text.

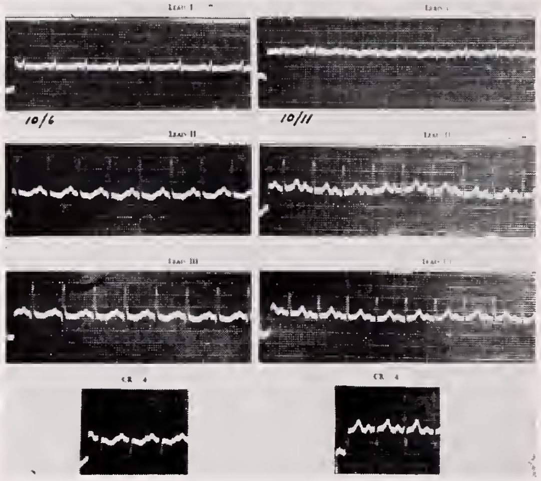
FIG. 5



G. H., age 62, gastric alkalosis. Chest leads following recovery from hypokalemia.

Each of the three cases presented here were considered to have normal renal function and good urinary output at all times. Therefore, we did not fear hyperkalemia. With adequate renal function, it is usually safe to administer potassium salts, although the possibility of over treatment must always be kept in mind; deaths have been reported during the administration of potassium intravenously even though supposedly adequate control with a cardioscope was being maintained.

FIG. 6



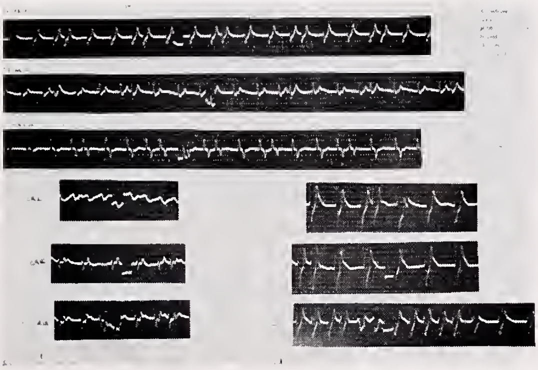
F. M., age 40, malnutrition. EKG 10/6/49 with evidence of hypokalemia. Repeat EKG 10/11/49 following potassium therapy. See text for details.

To illustrate the potassium disturbances in the initial phases of diabetic acidosis the following case is reported: R. R., a 31-year-old white male, a known diabetic, was admitted on June 21, 1949, in deep coma. According to the history, he had taken no insulin in the past forty-eight hours and had been vomiting profusely for eighteen hours. The admitting diagnosis was diabetic acidosis. Laboratory findings revealed a blood sugar of 407 mgm. and $CO_2$ combining power 5.7 volumes per cent. An EKG (see Fig. 7) showed definite evidence of severe hyperkalemia. The patient died before any therapy could be instituted. A serum potassium level was 14 mEq. The possibility of this death resulting from toxic serum potassium levels is strongly suggested from the findings; it is known from animal experiments that death can result when the potassium level reaches 14 to 16 mEq.

## DISCUSSION

We have purposely omitted the differential EKG signs of potassium disturbances; these

FIG. 7



R. R., age 31, diabetic coma. Idioventricular rhythm. Absent P waves, deep S waves with extremely tall pointed T waves. Expired shortly after tracing was taken. Serum potassium 14 mEq.

changes have been well reported and the reader is referred to the bibliography for such descriptions. However, we would particularly like to call attention to the EKGs shown in the illustrations since they exhibit the ST depression, T wave change, and prolonged QT interval of hypopotassemia. We wish to stress the importance of the U wave. It can be seen that the U wave is wholly or partly responsible for the prolongation of the QT interval, and the manner in which the T and U waves conjoin to form a peculiar TU pattern is especially important. This T-U pattern diagnosis of potassium deficiency is often best seen in the chest leads, particularly CR II, III and IV (see Fig. 5). We recommend at least one chest lead but preferrably three in following potassium disturbances. We have also observed a tendency for an increase in P wave amplitude in hypopotassemia with decrease following therapy.

Potassium is the major base of the intercellular elements and is the counterpart of extracellular sodium. It serves within the cell the same function relative to osmotic pressure regulation and acid-base balance as sodium does in the extracellular fluid. In some ways potassium plays an important part in the conduction of nerve impulses and synaptic transmission. The potassium ion is necessary for normal cardiac function.

Our treatment of hypokalemia has consisted of the use of potassium chloride by mouth, supplied as .3 gm. (5 gr.) enteric coated tablets and given in doses up to 12 gm. daily. We have also used an old nutritional favorite of by-gone days, Valentine's Meat Extract, which furnishes 1 mEq. of potassium per cubic centimeter. However, this costs approximately $1.80 for a small bottle and is therefore somewhat impractical from this viewpoint. We have seen no untoward effects from potassium chloride in the above dosage where renal function was adequate. Where oral therapy is not feasible, potassium may be given parenterally by adding powdered potassium chloride to the infusion bottle of glucose in water, normal saline, or ½ normal saline. We have also used by hypodermoclysis doses of 2 gm. liter without discomfort. Alidase has been used when giving the solution subcutaneously in order to facilitate absorption.

We believe with Bellet that the EKG can serve as a fairly good criterion of serum potassium values. He has suggested the following reasons for this: (1) the importance of potassium in muscle contractions the electrical events of which are recorded by EKG; (2) the heart is early affected by potassium even before skeletal muscle; (3) the almost immediate alterations in the tracings by the administration of potassium, (4) the ability of serial EKGs to follow the change in potassium levels; and (5) the absence of patterns of potassium disturbances in normal tracings.

The danger of overtreatment with potassium can be avoided by remembering the conditions apt to be associated with hyperkalemia, an early estimate of renal function and a control EKG before administration of potassium. The clinician should give sufficient clinical data to the electrocardiographer so that the latter will consider the possibility of potassium changes. It is more important than ever that the request for an electrocardiogram state whether or not digitalis preparations have been used, since interpretation of potassium changes is more difficult in the presence of digitalis effect.

## Summary

1. The diagnosis of potassium disturbances depends on an awareness of those diseases in which it is likely to occur.
2. Observation for flaccid paralysis, atonicity, and weakness is important. Although we did not encounter any demonstrable paralysis in our cases of potassium disturbance,

a general weakness was evident when looked for and improvement was noticeable following potassium therapy.

3. The importance of electrocardiography as a means of diagnosis has been shown.
4. The use of sodium and potassium blood levels in evaluation of electrolyte disturbance may be available in the future.
5. For the present, it is our feeling that potassium metabolism can be followed in the general hospital by the measures outlined.

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## CYSTOSARCOMA PHYLLODES

### Report of Case Showing Regional Recurrence and Distant Metastasis

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Cystosarcoma phyllodes is rather widely accepted as descriptive of a specific type of breast tumor, arising from connective tissue of a pre-existing mammary adenofibroma. Lee and Pack (1) state that "inasmuch as the neoplasm is usually not malignant the word 'sarcoma' cannot be justifiably employed."

The case reported herein represents one of 3 cases of cystosarcoma phyllodes that have been seen at the Memorial Hospital during the period 1935-1950. A cursory review of cases found in the registry of breast tumors (Carpenter Memorial Clinic) revealed 3 additional cases of giant adenofibroma. Whether or not further study of the microscopic features in these latter cases might properly result in their reclassification as bona fide cystosarcoma phyllodes cannot now be suggested. It would seem, however, from the gross description of these tumors and in the light of the present review of this subject, that such a study would be warranted. Indeed, in perusal of cases reported from other sources, one is impressed with the paucity of microscopic description and with an apparent lack of uniformity as to what histologic criteria are necessary to warrant a diagnosis of cystosarcoma phyllodes.

In an excellent review of the subject Hill and Stout (2) comment as follows: "Microscopically, the picture is variable, although there are two extremes between which all gradations occur. At the one extreme the similarity to fibroadenoma is well retained; the only difference is in the increased cellularity of the stroma and the presence of scattered mitoses and bizarre cell forms. Myxomatous changes often occur, and Lee and Pack stated that 'the metaplasia of the stroma into such tissue is the distinguishing and essential feature of the intracanalicular variety.' At the other extreme is a highly cellular appearance, the tumor being composed of indefinitely spindle or polymorphous cells separated by little collagen. Mitoses, giant cells and atypical cells are numerous, and the stroma has a true sarcomatous appearance."

Apart from the microscopic findings it would seem that the gross appearance of this tumor is striking enough to suggest its nature very strongly. While Lee and Pack may overstate this aspect of the problem when they say that "hemisection of the surgical specimen in the operating room reveals a gross appearance which is absolutely diagnostic and cannot be confused with any other tumor of the breast," all observers seem agreed that its bulky nature, its lobular arrangement, its fairly firm consistency interpersed with cystic or myxomatous areas, and the polypoid masses projecting from branching or stellate clefts, thus producing the cauliflower-like appearance, combine to produce a rather typical picture.

In respect to prognosis, authorities consistently agree that it is the exceptional case that exhibits any true malignant characteristics. In general, if recurrence does occur, it is usually within the operative field itself. Even local recurrence appears to be infrequent enough that most observers feel that simple mastectomy or even local excision represent adequate treatment.

In the author's case cited below, operation consisted of removal of the entire breast with inclusion of the pectoral fascia and with skin and fat excision as routinely carried out in a radical mastectomy. Recurrence was both regional and skeletal.

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### Case Report

M. M., unmarried white female, 48 years of age, first seen on 12/3/48. Four days prior to examination she had accidentally discovered a lump in her right breast. (N. B.—Contrary to classical history for this type of lesion no pre-existing nodule had been observed and there was no report of recent rapid growth).

Office record of examination as follows: "On inspection, suggestion of fullness just above areola and on raising arm slight dimpling of skin is noted. This dimpling cannot be as clearly reproduced when patient is in recumbent position and the tumor fixed in one plane and mobilized in opposite axis. Tumor readily felt in both sitting and lying positions and seems roughly lobulated (dumb-bell shape). Measures 9 x 6 cm. and in consistency not incompatible with carcinoma. However, no axillary nodes palpable in spite of size of mass and inclined to feel that it is a giant fibroadenoma."

Aspiration biopsy of the tumor was done on day of admission to the hospital, laboratory report from which was as follows: "The smears of the aspirate of the breast were originally reported verbally as indicative of carcinoma. The subsequent lesion which was removed at operation was cystosarcoma phyllode of the breast showing marked intraductal hyperplasia of the epithelium. This hyperplastic epithelium can be seen on the smears and was interpreted as neoplastic epithelial cells. Diagnosis: Hyperplastic epithelial cells from breast tumor" (Hooker).

In view of the apparent inconsistency between the aspiration biopsy report and the clinical impression of the tumor, local excision for frozen section seemed indicated.

Operation (12/9/48 consisted of local excision of tumor through an inverted T-shaped incision. Frozen section findings, while not reported conclusively, seemed in keeping with one's impression of the gross appearance, viz.: cystosarcoma phyllodes. Accordingly, removal of the entire breast together with the pectoral fascia was decided upon and immediately carried out after complete change of gown, gloves, and drapes, and fresh instrument setup. At this time the skin and fat removal were planned as for a radical mastectomy or as would normally be employed in bloc excision of a soft tissue sarcoma.

Report of microscopic findings (Hooker): "The histologic appearances of the tumor are those of a so-called giant fibroadenoma or cystosarcoma phyllodes. Diagnosis: Cystosarcoma phyllodes of breast (giant fibro-adenoma with sarcomatous stroma)."

Post-operative course was without incident and patient was discharged from the hospital on 12/13/48.

The patient was seen at the office at fourmonthly intervals, last on 5/24/50. At this time no evidence of local recurrence was noted, but the patient complained of pain in the left ischial region of 2-3 weeks duration. No other bone or joint pain was complained of and percussion of spine was negative. X-ray of pelvis was advised in reporting to her family physician.

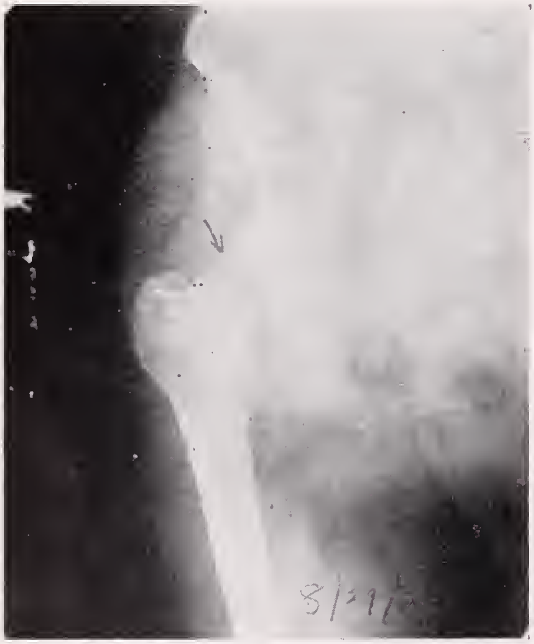
The patient was not seen again until 9/1/50 when she was readmitted to the Memorial Hospital for treatment of a spontaneous fracture of the neck of her right femur. The following interesting and significant facts, however, were supplied by her physician and cover the interval between her last office visit and her readmission to the hospital.

Because of a negative report of the x-ray examination of her pelvis at the Memorial Hospital (6/5/50) and because of persistent gluteal pain, she was referred by her physician to a neurosurgeon at University Hospital (Baltimore). Here skeletal x-rays were repeated and again reported as negative. Approximately two weeks after admission the patient called her nurse's attention to a lump that had "suddenly appeared" in the right lateral chest wall. A surgical biopsy of this tumor was carried out by the neurosurgeon the following day, and at the same time the lower spine region was explored for possible disc injury or metastatic tumor producing cord pressure. No evidence of disc damage or of metastatic tumor was found in the lower spine. The biopsy report from the chest wall tumor was as follows: "The lesion, as seen in the section, is thought to represent a metastatic anaplastic carcinoma, the primary site undetermined" (Dr. Hugh R. Spencer).

Since patient's pain was becoming progressively uncontrollable even with large doses of opiates, cordotomy was advised and carried out. The patient returned to her home two weeks later, entirely relieved of pain but with the chest wall mass showing rather rapid increase in size.

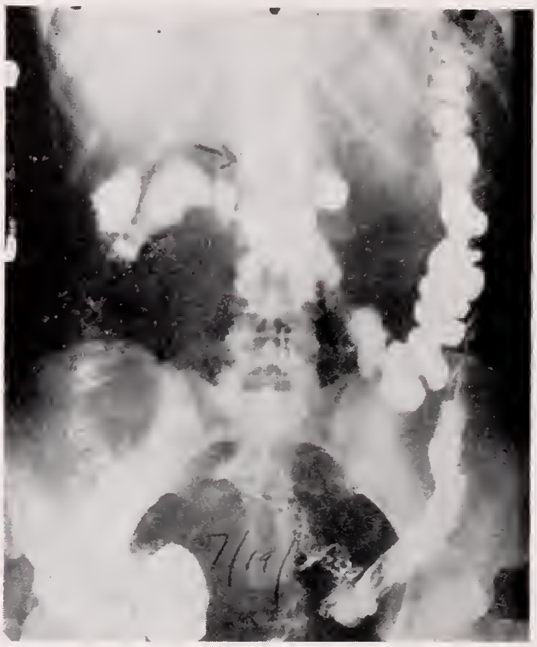
Upon readmission to the Memorial Hospital x-ray of her right hip region disclosed a transcervical fracture of her femur with characteristic type of displacement of the fragments, but without clear evidence of any disease process in this area (Fig. 1). The films did reveal, however, a very extensive destructive lesion in her right ilium and when this film was compared with those taken at the Memorial Hospital on 6/2/50 and at the University Hospital (Baltimore) on 7/20/50, it became immediately evident that osteolytic involvement of the pelvis and of the spine was demonstrable in the original films. The cannon-ball defect in the ilium is especially striking in the University Hospital films where the ascending colon is filled with barium and thus, by contrast, differentiating the process from intestinal gas (See Fig. 2).

FIG. 1



Fracture clearly visible although its pathologic nature not evident.

FIG. 2



Area of destruction in ilium stands out in contrast to barium filled colon.

Aspiration biopsy of the ilium was done on 9/17/50 and from the material obtained both a smear and routine section for microscopic study were prepared.

Report of this biopsy as follows: "The smears show clusters of bizarre tumor cells with hyperchromatic nuclei. Many of the cells have two or three nuclei. H. and E. sections of the bloody fluid reveal the presence of highly atypical tumor cells with bizarre hyperchromatic nuclei and in one area suggests that the primary site of the tumor may be bone. It is quite possible, however, that this represents a metastatic lesion of the previously reported cystosarcoma phyllodes of the breast" (Casella).

Review by the Delaware Pathological Society of the slides submitted in the case of M. M.: "It is our unanimous opinion that the first specimen is an adenofibroma of the breast showing a sarcomatous change of the connective tissue component. We differ in our opinions of the other specimens. Dr. John Howard believes that the specimen from the chest wall is an undifferentiated carcinoma and that the specimen from the ilium is metastatic from this. Dr. Joseph Casella believes that the specimen from the chest wall is a sarcoma unrelated to the original but is perhaps related to the specimen from the ilium. Dr. Richard Colfer agrees with Dr. Casella. It is my opinion that all three tumors are probably related'' (Dr. D. M. Gay).

The patient's course is steadily but not rapidly down hill. No treatment other than nailing (Smith-Peterson) of the hip fracture has been attempted. While the richly cellular make-up of the chest wall lesion might make it responsive to irradiation, none has been given because of the multiple additional areas involved by tumor.

### Summary and Conclusions

The general nature of cystosarcoma phyllodes together with its gross and microscopic characteristics, prognosis and treatment is discussed.

Attention is called to the occasional malignant behavior of this type of tumor, and a personal case showing pulmonary and skeletal metastasis is cited.

The case in point would seem to qualify both in its gross and microscopic features as one of cystosarcoma phyllodes.

It becomes apparent from the differing opinions expressed by the pathologists who reviewed the various slides that in its malignant phase the tumor may assume a bizarre microscopic picture even to simulating an anaplastic carcinoma.

The point remains undeveloped as to whether there is in the microscopic picture of the primary tumor anything that would betray its inherent malignant nature.

Evaluation of initial treatment in this case seems to warrant the conclusion that no more radical procedure would have modified the end result.

Finally, the value of aspiration biopsy is again emphasized. While in the case cited x-ray evidence of a metastatic lesion in the ilium was more than merely suggestive, the exact nature of this lesion was established by tissue examination made possible by a bedside procedure no more complicated than thoracentesis.

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# THE RELATION OF FOLLICULAR LYMPHOBLASTOMA, LYMPHOSARCOMA AND HODGKIN'S (RETICULUM CELL) SARCOMA

## A Case Report

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The confusion arising from the diverse terminology and manifold theories of etiology and cellular origin has long made the study of the malignant lymphomas a perplexing one to students of pathology. This chaotic situation was greatly clarified by Herbut, Miller and Erf[3], when, in a study of six cases, they were able to demonstrate a definite relationship among three of the diseases commonly included in the lymphoma group; namely, Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma. A comparison of biopsy material with that obtained at autopsy showed either a change from lymposarcoma to Hodgkin's disease (with or without persistence of the lymphosarcoma) or addition of one or two different forms of lymphoma to the pre-existing type (s). Two of their cases demonstrated all three varieties of lymphoma at autopsy. They theorized that the common stem cell is the reticulum cell which differentiates toward lymphosarcoma when there is an excess of a theoretical ''lymphoid stimulator,'' toward Hodgkin's disease when both ''lymphoid and myeloid stimulators'' are present (providing this stimulation is accompanied by ''maturation''), and toward reticulum cell sarcoma when both ''stimulators'' are present without the ''maturation'' factor.

Custer and Bernhard[1] further illuminated the still somewhat abstruse situation in a study of material from 1300 cases (Hodgkin's material comprising 700 cases and an additional 600 cases of lymphomas apart from Hodgkin's disease). In addition to observing alteration between biopsy and autopsy material, in which various lymphoma types were found in different regions of the body, they noted combinations of lymphoma types within single lymph nodes in 255 instances. Most frequently these combinations were within the Hodgkin's group —Hodgkin's paragranuloma, Hodgkin's granuloma and Hodgkin's sarcoma (Jackson and Parker[4]). In five cases, three distinct types of lesions were seen in single lymph nodes. From these observations, Custer and Bernhard devised a chart showing the interrelationship among the lymphomas adding follicular lymphoblastoma and lymphocytic and monocytic leukemia to the lesions described by Herbut *et al.* as being interrelated. From his own observations, as well as those recorded elsewhere, Custer[2] has expanded the chart to include mycosis fungoides, Spiegler-Fendt Sarcoid as a variant and fibrosarcoma and angiosarcomas as associates.

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*From the Department of Pathology, Memorial Hospital.

For a review of the literature on this subject, the reader is referred to the complete bibliographies given in the reports mentioned above. Rather than review, it is more the purpose of this paper to stimulate further interest in the interrelations of the lymphomas by adding to the literature a report of one such case that recently came to our attention.

### CASE REPORT

The specimen that we received was removed surgically at another hospital from a 55-year-old white male laborer who presented himself first to his local physician with the complaint of difficulty in walking because of a large mass in the right inguinal region. One year previously the patient had noted a small nodule in this region and had been told that it was a hernia. No treatment was (apparently) recommended. Aside from a mild cerebrovascular accident during the year prior to admission, the past history and systemic review was not significant. There had been no weight loss, anorexia or generalized weakness.

Physical examination disclosed signs of a left hemisparesis and a large, lobular, rubbery mass in the right inguinal region over which the skin was freely movable. The spleen, liver and other lymph nodes were not enlarged to palpation. The patient was afebrile and the blood pressure was 240 systolic, 130 diastolic.

Examination of the blood revealed 4.3 million red blood cells and 83% hemoglobin. The white blood cell count was 9,400 with a normal differential and no atypical cells were noted. The erythrocyte sedimentation rate was 15 mm. per hour.

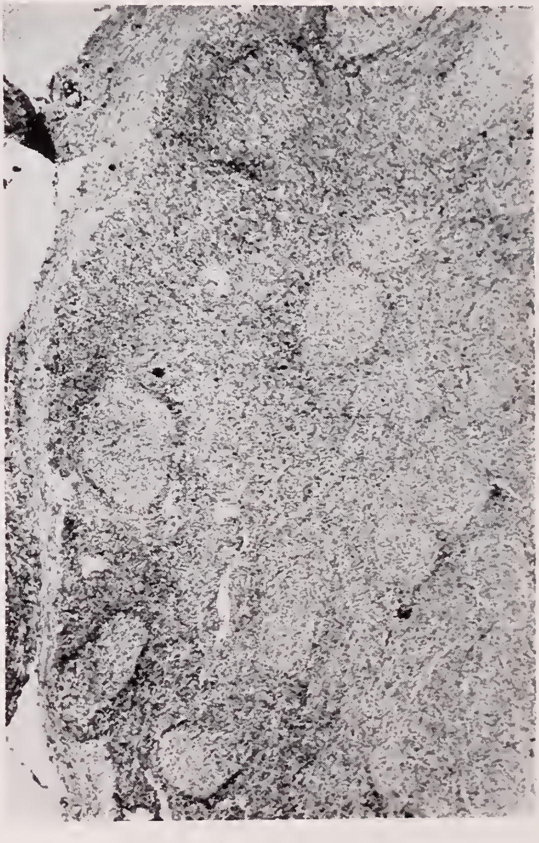
On 7/25/49 the mass was excised and submitted to this hospital for pathological examination.

### PATHOLOGICAL REPORT

Grossly the specimen consisted of five separate encapsulated masses of rubbery tissue with a pale reddish-gray, glistening external surface. The largest mass was 12 x 7.5 x 6 cm., and the smallest 3 x 2.5 x 1.5 cm. The cut surface of each mass bulged and had a similar appearance. Large, irregular, yellowish, necrotic areas and small, dark red, flame-shaped hemorrhagic areas mottled the otherwise homogeneous pale pinkish-gray, moderately firm tissue.

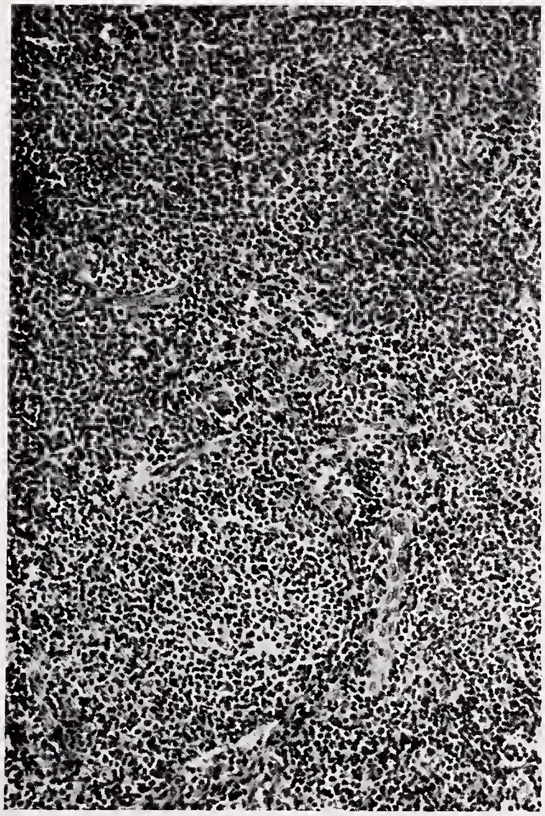
Sections of tissue from numerous sites were prepared for histologic examination. All showed a well-defined, thin, fibrous, connective tissue capsule. A few of the sections were lymphoid tissue in which there was a striking numerical and moderate dimensional increase in follicles characteristic of follicular lymphoblastoma (Fig. 1). In nearby fields the archi-

FIG. 1



Area of follicular lymphoblastoma, showing numerical increase in follicles. H. & E. x50 tecture of the node was obliterated by large aggregates of small, uniformly sized, round to slightly oval cells having dark, coarse nuclei and a scanty pale blue cytoplasm (Fig. 2).

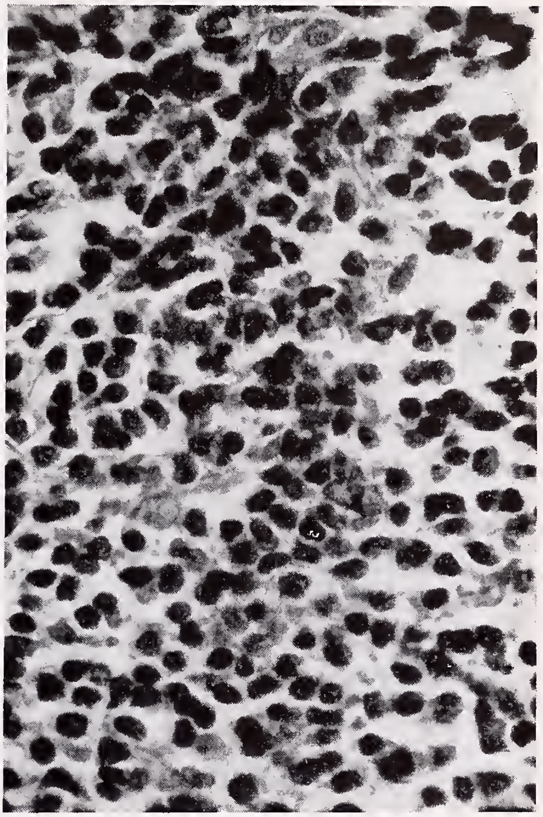
FIG. 2a.



Lymphasarcama. H. & E. x230

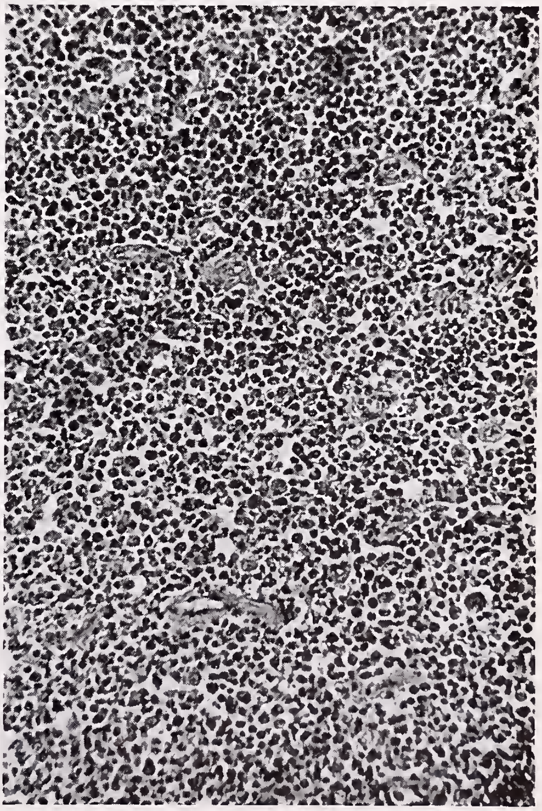
Supporting these lymphocytes was a delicate network of capillaries and a fine fibrillar reticulum. The major portion of the tissue consisted of masses of evenly dispersed free cells considerably larger and more irregular in both size and shape. These cells showed a scanty pale eosinophilic cytoplasm and large oval vesicular nuclei containing small clumps of chromatin and very prominent nucleoli (Fig. 3). The loose cells were supported by a delicate network of capillaries and thin strands of reticulum. Larger cells with more abundant cytoplasm and lobular nuclei suggesting Reed-Sternberg cells were observed in small numbers scattered throughout the material. Although large areas of necrosis were present, the fibrosis, eosinophilia and pleomorphism of Hodgkin's granuloma were not evident.

FIG. 2b.



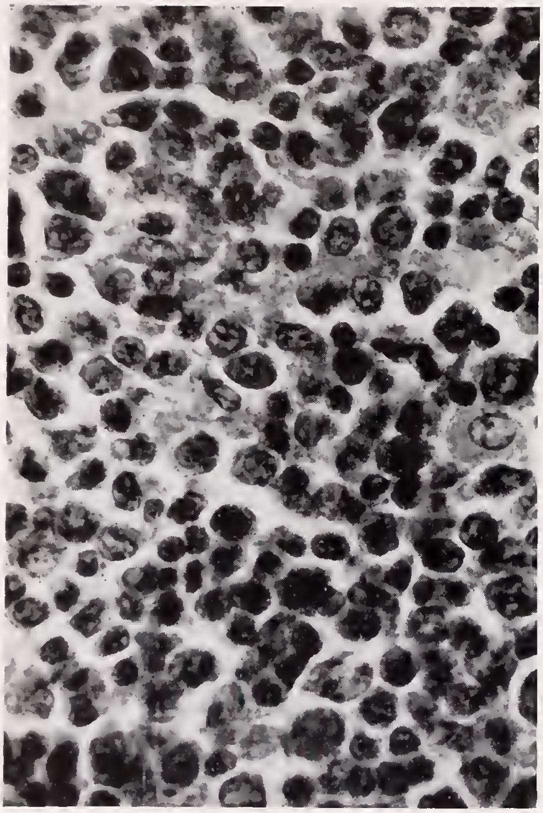
Lymphosarcoma. H. & E. x1080

FIG. 3a.



Hadgkin's (reticulum cell) sarcoma. H. & E. x230

FIG. 3b.



Hodgkin's (reticulum cell) sarcoma. H. & E. x1080

## Discussion

It is our distinct belief, that the tissues described and illustrated in figures 1 and 2 are follicular lymphoblastoma and lymphosarcoma respectively. There is furthermore no doubt that the last tissue described is an undifferentiated lymphoma in which the predominating cell is the reticulum cell; but, because of the presence of cells compatible with the description ordinarily applied to the Reed-Sternberg cell of Hodgkin's disease, whether one should designate the tissue as reticulum cell sarcoma or Hodgkin's sarcoma is conjectural. Cells *resembling* Reed-Sternberg cells can frequently be found to greater or lesser extent in the majority of so-called reticulum cell sarcomas and occasionally even within the germinal centers of normal lymph nodes. The authors are inclined to agree with Custer and Bernhard[2] that there is no fundamental difference between reticulum cell sarcoma and Hodgkin's sarcoma, the apparent difference being only in the relative conspicuousness of Reed-Sternberg cells in the latter.

Although the material received consisted of a group of inguinal lymph nodes, the various types of lymphomatous change described were present within single nodes of this group. The problem presented to the pathologist who is asked to diagnose and prognosticate from examination of a solitary node or even a portion of a solitary lymph node is exemplified by this case and the numerous other cases in which 2 to 3 lymphoma variants have been found within single nodes. Too often the radiotherapist and patient are misled by a diagnosis of "giant follicular lymphoma" or "Hodgkin's paragranuloma" with its implied relatively favorable prognosis. Because of the possibility of a more "malignant" variant being already present in other lymph nodes not examined, we feel that one should adopt the "safe" yet honest policy in diagnosing such lesions as "malignant lymphoma," parenthesizing the particular histologic type of lymphoma seen. This, we believe, would be of distinct aid to those physicians not yet accustomed to evaluating the lymphomas in terms of their interrelationship.

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# BOWEN'S DISEASE OF THE SKIN Associated with Squamous Cell Carcinoma of the Skin, with Metastasis to the Axillary Lymph Nodes

## A Case Report

Leonell C. Strong, Jr., M. D.,
and
Alan Iddles, M. D.,
Wilmington, Del.

This was the first Memorial Hospital admission of a 70-year-old white maiden female, who was admitted on August 28, 1950, with the chief complaint of multiple skin lesions of approximately one year's duration, and the change of one of these lesions to an ulcerated bleeding mass within the past several months.

P. M. H. The patient denies previous surgery or serious illness.

F. H. Non contributory.

H. P. I. The patient had always been in the best of health until twelve to fourteen months previous to admission, when she developed on her trunk and upper extremities scaly lesions on a reddish base. These continued to increase in diameter and in the height of the scale which covered the lesions. Three to four months ago the lesion below the left breast ulcerated and bled continuously. The patient also noticed a lump in the left axilla, to which she gave no heed and for which she sought no medical advice. However, this former lesion continued to ooze and she finally presented herself for examination.

Physical examination. General. Examination revealed a well preserved white female of 70 years, pale but very active for her age. The positive findings were limited to the skin of the trunk and upper extremities and over these surfaces approximately ten individual lesions presented themselves. These were irregular reddish patches covered with an adherent crust of keratinized material, some being about one centimeter in thickness. The base, when the crust had been removed, was reddish, irregular in outline and very slightly raised from the surface of the skin, presenting a finely graulated cast. One of the lesions on the left lateral chest wall, just beneath the left breast, was distinctly different. This was a meaty bleeding fungating mass raised from the surface approximately 3 cm. and approximately 6-8 cm. in diameter. It was freely movable over the chest wall and was not attached to the deep fascia.

The examination of the breasts was negative. Except in the upper outer aspect of the left breast there was a hard nodular mass 2-3 cm. in diameter attached to the pectoral fascia. Directly beneath the pectoral muscle was another mass 4-5 cm. in diameter adherent to the pectoral fascia but freely movable in relation to the thoracic cage. Examination of the supraclavicular areas was negative as well as the right breast and axilla.

X-rays of the lungs were negative for evidence of metastasis.

In discussion of this case it was agreed that these cutaneous lesions were typically Bowen's disease or intraepithelial carcinoma, and that the lesion beneath the breast was in all likelihood squamous cell carcinoma of the skin which had metastasized to the axillary lymph nodes. This was substantiated by biopsies taken on admission.

The operation consisted of a radical mastectomy, extending the incision downward to include the lesion described above. The inferior point of the incision was within 2 cm. of the anterior iliac spine. The enbloc dissection included the breast, pectoral major and minor muscles, axillary lymph nodes, and the sheath of the rectus muscle which was beneath the neoplastic mass. A full drum split thickness skin graft was applied to the defect; pressure was applied with fluff gauze, mechanics' waste and curlex bandages.

Fourteen days after operation, 95% of the skin graft had taken satisfactorily.

## Bowen's Disease

This disease is essentially an intraepithelial squamous cell carcinoma. It occurs in middle-aged or elderly persons of either sex and may involve any part of the skin but is most usual on the trunk or other unexposed areas.

Grossly the lesions occur as single or multiple, irregular, firm, reddish-brown papules or plaques with thickened, horny crusts. Instead of being crusted, some of the lesions may show a superficial granular erosion and they may enlarge and coalesce to form larger lesions and may show peripheral extension with central involution, being in these respects similar to psoriasis. After months or even years (as long as 30 years has been reported) the lesions may become invasive squamous cell carcinoma and metastasize. This disease is said never to develop into basal cell carcinoma.

Under the microscope the lesions have the appearance of squamous cell carcinoma except that there is no evidence of invasion and the basement membrane of the epidermis is intact. There is hyperkeratosis, individual keratinized cells are seen scattered through all layers of the epidermis, and the prickle cells are distorted and bizarre (acanthosis). The cells show irregularity in size and shape including giant and multinucleated forms, mitoses are frequent and nuclei are hyperchromatic and distorted. One often sees large, round, pale vacuolated cells (nuclei surrounded by cytoplasmic halos) which are very similar to Paget's cells. It is said, however, that intercellular bridges are present between these cells in Bowen's disease, whereas in true Paget's disease they are absent. There is usually an infiltrate of chronic inflammatory cells (lymphocytes and plasma cells) in the upper part of the dermis underlying the epidermal lesions.

There is some dispute as to the relationship of this disease to other precancerous skin conditions. Willis considers Bowen's disease, Paget's disease of the nipple, extra-mammary Paget's disease and Queyrat's erythroplasia all to be variations of the same disease, while Ormsby states that Bowen's disease is similar to other precancerous dermatoses, in which he includes only senile keratosis, keratosis due to arsenic, tar or radiation and leukoplakia, but that it is a distinct entity. The subject is confusing because other lesions may look like Bowen's disease clinically but not histologically, or histologically but not clinically.

The accepted treatment is surgical excision. Radiation is considered to be contraindicated because the lesions are similar to early radiation epithelioma.

The large fungating lesion of the skin below the left breast and the adjacent lesion which was biopsied before operation were considered to be probable squamous cell carcinoma. There were areas in these microscopic sections which were consistent with Bowen's disease, so that it is believed that the lesion arose from a primary Bowen's disease. The lesions deep within the breast were more anaplastic and suggested squamous cell carcinoma in some areas, a primary breast carcinoma in other areas with apparent formation of mammary ducts, and in other places the cells were too anaplastic to determine the site of origin. Correlating the history with clinical and pathological findings, however, it seems likely that this patient had a primary Bowen's disease which developed into invasive squamous cell carcinoma and metastasized to the left breast.

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# CREATINE EXCRETION IN ACUTE POLIOMYELITIS

## Preliminary Report

GEORGE J. BOINES, M. D.*
and
JAMES C. KAKAVAS, Ph.D.**

The biochemical implications of acute poliomyelitis have received little attention in the literature. Creatinuria and its relation to acute poliomyelitis is an example in point. Hypercreatinuria in poliomyelitis was first found by Gros[1] and then Wang[2] in late cases, by Dalldorf[3] who observed it in mice in the early stages, and by Knud Brochner-Mertensen[4] who reported it in acute poliomyelitis.

The general subject of creatine and creatinine metabolism has been recently reviewed by Beard[5]. Creatine is the chief nitrogenous constituent of muscle tissue. Creatine and creatinine are both products of protein metabolism since they arise from practically any of the amino acids. Creatine is absent from the urine of normal males, [6-7] but is present in the urine of children up to the age of puberty and frequently in urine of women. Excessive creatinuria may occur in starvation, febrile and wasting diseases, in myopathies, after fractures and in certain metabolic disturbances. It is believed to be derived from excessive catabolism of muscle tissue and it has an important bearing on the mechanism of muscular contraction and carbohydrate metabolism.

There is also clinical,[8] laboratory,[9] and pathological evidence that voluntary muscle tissue atrophies in paralytic poliomyelitis and that such muscle is replaced by fibrous and fatty tissue. [10-14] On this basis, it was postulated that by means of creatine excretion studies it would be possible to determine the time of onset and the degree of muscle atrophy in poliomyelitis and what effect, if any, various therapeutic procedures may have on such muscle atrophy.

This preliminary report is being published in the hope that it may stimulate further studies in other hands. It embraces the data of thirty-eight patients—12 controls, 10 nonparalytic and 7 bulbar of the 1949 Delaware

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**Director of Department of Biological Sciences, University of Delaware, Newark, Delaware.

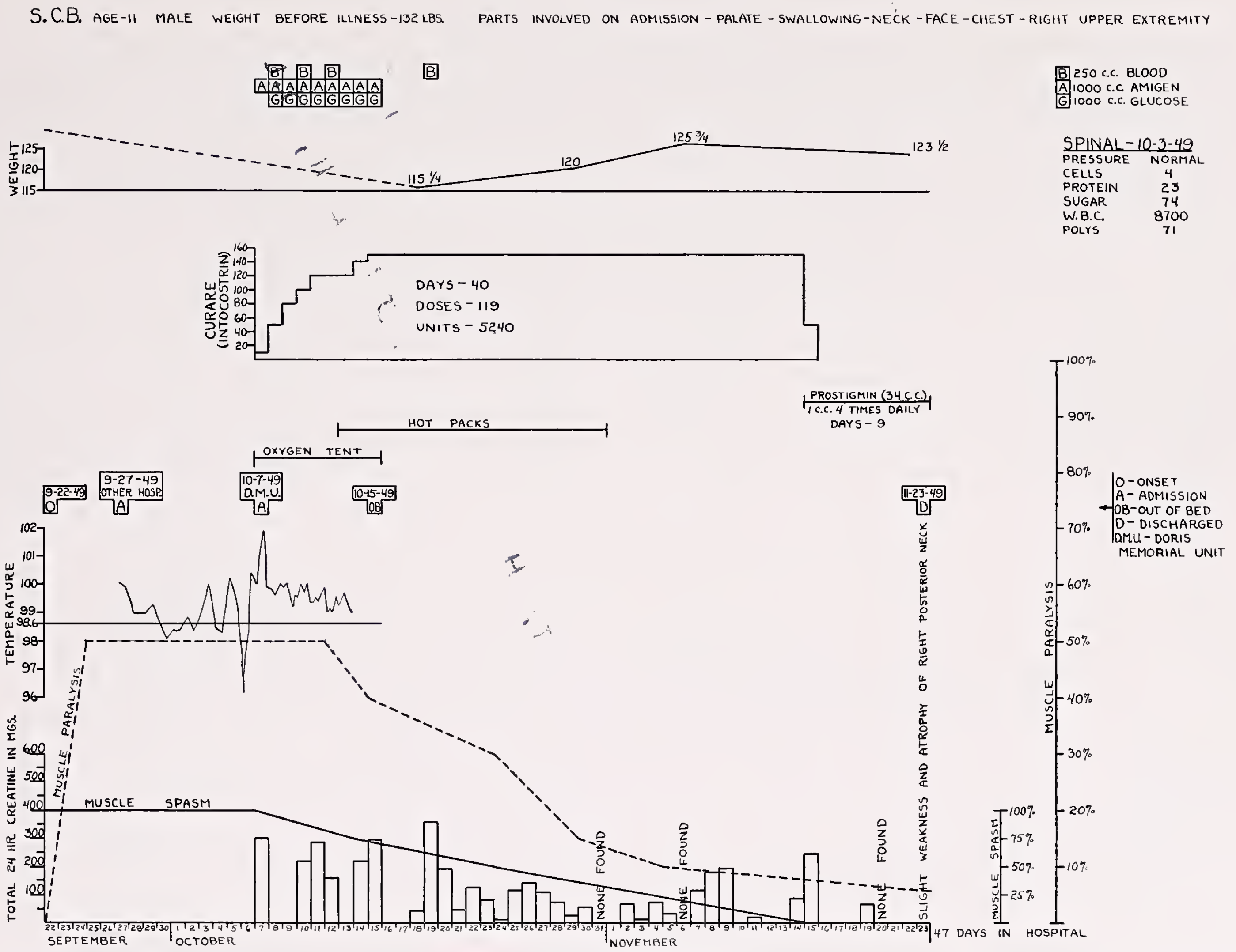

Fig. 1—S. B., Male, Bulbo-Spinol paralytic. Note improvement after admission to Doris Memorial Unit. The significance of the creatin excretion is described in the text.

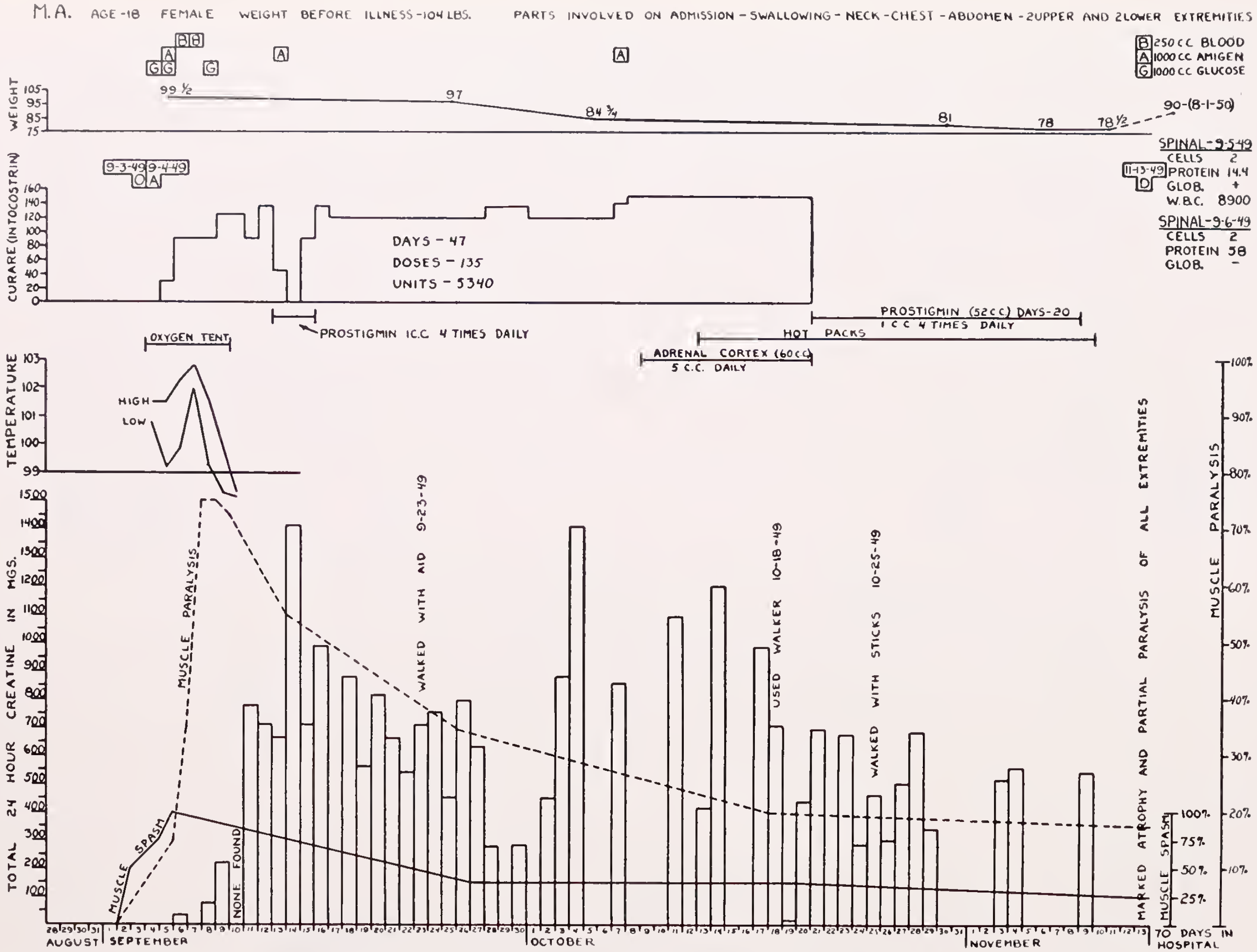

Fig. 2—M. A., Female, Extensive Spinal paralytic. Note improvement of muscle paralysis and muscle spasm. Creatin excretion parallels the extent of muscle atrophy in the patient.

outbreak. In all 427 creatine examinations were done. A more detailed report will be forthcoming when all the cases have been analyzed.

The total amount of creatine present in a twenty-four hour sample of urine was determined by the Folin[15] method. The day by day excretion of two cases are set forth as examples in Figures 1 and 2. On the basis of these findings our preliminary impressions may be stated as follows:

1. Creatine excretion is irregular from day to day but the overall excretion over a number of consecutive days is higher in the severe paralytic than it is in the mild or non-paralytic.
2. Curare, prostigmine, priscoline, adrenal cortex solution, vitamins, intravenous protein hydrolysates, glucose, blood transfusions and high protein diets have no significant affect on the creatinuria.
3. Spinal fluid findings, routine urine analysis and blood chemistry bear no relationship to the creatine excretion.
4. No definite change is produced in the creatinuria by hot packs or oxygen by tent.
5. Creatinuria is greater in the first two weeks of the acute illness when the activity of the patient is limited; and it is greatly diminished after the patient is much more active. Beard[5] states that muscular exercise does not usually affect the creatine-creatinine excretion.
6. More creatine is excreted when the atrophy is greater in the lower extremities.
7. Creatinuria is generally higher in the presence of fever but this is not consistent in all cases.
8. As the weight of the patient drops the creatinuria rises and as the loss of weight stops or begins to increase, the creatinuria decreases.
9. The decrease of muscle rigidity seems to bear a relationship to the decrease in creatinuria.

## Conclusion

It appears from the preliminary data that daily creatinuria evaluations in 24 hour specimens of urine, done from the onset of acute poliomyelitis, can be of value in determining the cessation of muscle pathology, rigidity, atrophy, and/or the re-establishment of normal muscle nutrition and metabolism. Therefore, active therapy directed toward the correction of the pathologic physiology in the muscles should perhaps be continued until creatinuria diminishes or disappears.

The authors acknowledge with thanks the technical assistance of Miss Mary A. Medill and Mrs. Ray Sammons, Jr.

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## Committee on Fractures and Other Traumas American College of Surgeons

## THE CARE OF HAND INJURIES

## III

### SURFACE INJURIES

I. The first-aid care of wounds of the hand is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. The best first-aid management consists in the application of a sterile protective dressing, a firm compression bandage and immobilization by splinting in the position of function.* No attempt should be made to examine, cleanse, or treat the wound until operating room facilities are available.

II. Early definitive care requires thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first-aid treatment, and appraisal of structural damage. For undertaking the definitive treatment the conditions required are a well-equipped operating room, good lighting, adequate instruments, sufficient assistance, complete anesthesia, and a bloodless field. The treatment itself consists of aseptic cleansing of the wound, removal of devitalized tissue and foreign material (exercising strict conservation of all viable tissue), complete hemostasis, and the repair of injured structures, to be followed by protective dressing to maintain the optimum position. After-treatment consists of protection, rest and elevation during healing and early restoration of function by directed active motion.

III. Burns, abrasions and avulsions may cause destruction and denudation of any area of the skin of the hand. The care of such injuries has three major objectives: (1) Protection from infection; (2) Early restoration of skin covering; (3) Avoidance of disabling scarring and contractures. These objectives are sought in the various stages of treatment:

(1) First-aid treatment—(a) chemical burns: remove chemical by profuse irrigation with water, preferably warm; (b) heat burns, abrasions and chemical burns (after washing away the injuring agent): Apply sterile dressing completely to cover the hand, and bandage firmly.

(2) Definitive treatment—This should be carried on in operating room under conditions of strict asepsis. (Draping of field, sterile gloves, masking of operator and attendants) (a) gentle removal of first-aid dressing, soaking loose with normal saline solution if necessary; (b) gentle cleansing of injured surface by light sponging with saline on cotton balls; if surface is dirty or greasy, it may be gently cleansed with sterile neutral soap in sterile water or bland detergent; loose fragments and tags of skin are removed; blisters are not opened; (c) sterile strips of fine-mesh vaseline-impregnated gauze are smoothly applied to the injured surface; these are covered with dry sterile gauze, gauze being placed between adjacent fingers; the whole hand is covered with a thick layer of sterile mechanic's waste or fluff gauze, and splinted in the position of function; elastic knit bandage is applied over all, including all fingers, with firm even pressure; the hand is kept elevated.

(3) Subsequent dressings—The original dressing is left undisturbed for 12-14 days unless elevation of temperature suggests active infection requiring inspection. The second, and all subsequent dressings until healing, are done under completely aseptic conditions (as described above). Preparations for skin grafting should be made in advance: (a) the dressing is removed; slough and debris are washed away by irrigation with normal saline solution (no scrubbing of surface); (b) granulating areas from which slough has separated should be covered with thin split-thickness skin grafts; (c) dressing, similar to that employed at first definitive treatment is applied; hand is splinted in position of function; (d) further dressings, similarly conducted, are done at intervals of seven days until epithelization of burned surface is complete. Skin coverage by grafting should be secured as rapidly as possible, as the best assurance against infection, inflammation, infiltration, scarring, and contractures. This early coverage by "skin dressing" is of the greatest importance, even when epithelization from the margins is proceeding satisfactorily. Split-

*(Concluded on Page 310)*

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*Position of function or position of grasp: wrist hyperextended in cock-up position; fingers in mid-flexion and separated; thumb abducted and in mid-flexion, with tip pointing toward little finger.

# Editorials

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Vol. 22 October, 1950 No. 10

## The 1950 Meeting

The 161st Annual Session of the Medical Society of Delaware was held at the People's Church Community Hall, Dover, on October 2-4, 1950, President Lawrence L. Fitchett, of Milford, presiding.

The meeting of the House of Delegates was transacted with dispatch, many of the reports being routine. The report of the Budget Committee was referred to the Committee for certain alterations and corrections and was then adopted. There was a meeting of the Council prior to the meeting of the House of Delegates, this being the first such meeting held under the new By-Laws. The Council studied certain reports and recommended their adoption by the House of Delegates later. The transactions in full will be printed in the December issue of The Journal.

The scientific meeting proceeded exactly as printed in the September Journal, every scheduled paper being presented. The papers were of a high order and were well received and adequately discussed.

The elections for the year 1951 resulted as follows:

| | |
|---|---|
| President | Charles E. Wagner, Wilm. |
| President-elect | Ervin L. Stambaugh, Lewes |
| Vice-President | Benjamin F. Burton, Dover |
| Secretary | Andrew M. Gehret, Wilm. |
| Treasurer | Joseph M. Messick, Wilm. |
| Rep. to D.A.M. | W. Oscar La Motte, Wilm. |

The Woman's Auxiliary met in the same building under the Presidency of Mrs. J. Leland Fox, of Seaford. The highlight of their transactions was the establishment of a scholarship in nursing, and the first appointee is Miss Elizabeth Franzone, of Wilmington, who will study at the Delaware Hospital. Their election of officers for the year 1950-51 resulted as follows:

| | |
|---|---|
| President | Mrs. Douglas M. Gay, Wilm. |
| President-elect | Mrs. S. W. Rennie, Wilm. |
| Recording Sec. | Mrs. Andrew M. Gehret, Wilm. |
| Corresponding Sec. | Mrs. E. T. O'Donnell, Wilm. |
| Treasurer | Mrs. Lawrence L. Fitchett, Milford |

The social events were most pleasant. There was a luncheon on Tuesday for the members and guests given by the State Society and a similar luncheon on Wednesday given by the Kent County Society as host. On Monday, following the meeting of the House of Delegates, there was a social hour for the members present at the Dinner Bell Inn. The main social event was the reception and dinner Tuesday evening at the Maple Dale Country Club, which was attended by 98 subscribers.

The Woman's Auxiliary held their luncheon on Tuesday and were addressed by Mrs. Helen McDougall, of Wilmington, Hospital and Physicians' Relationship Officer of the Delaware Blue Cross-Blue Shield, who discussed some of the problems of the work in that field.

The technical exhibits were slightly less in number than the record set at Wilmington in 1949, but the decrease in costs will probably show the largest net income from exhibits we have yet received. The exhibits were in a hall separate from the meetings and there was no interruption to them because of the showing of pictures.

The registration was as follows:

| | Rehoboth<br>1948 | Wilmington<br>1949 | Dover<br>1950 |
|---|---|---|---|
| House of Delegates | 29 | 41 | 31 |
| Scientific Meetings | 51 | 106 | 83 |
| Members | 80 | 147 | 114 |
| Guests, Visitors, etc. | 17 | 38 | 19 |
| Residents, Internes, etc. | 3 | 20 | 6 |
| Exhibitors | 33 | 52 | 45 |
| Medical Society | 133 | 257 | 184 |
| Woman's Auxiliary | 41 | 68 | 45 |
| Total | 174 | 325 | 229 |

This registration of 114 members out of a total of 304 is exactly 37 1-2 per cent of the membership. It is our belief that the national average for state medical society conventions is approximately 25 per cent. If this be true, comparatively small though our meetings are, we feel that we can hold our heads high on the score of performance.

So passes into history the 1950 session. Now let us turn our heads once more towards Wilmington and make the 1951 session the best ever.

## THE CARE OF HAND INJURIES

*(Concluded from Page 308)*

thickness grafts are best for this purpose, even though it is anticipated that some of grafted area must later be removed for replacement by more suitable skin.

(4) Restoration of function—As soon as epithelization of burned surfaces is complete, directed active use and exercise of the hand is begun. Normal use of the hand is encouraged and voluntary exercises and appropriate occupational therapy prescribed.

Prepared by the American Society of Surgery of the Hand.

During the last twenty years a great and increasing interest has been taken in the incidence of tuberculosis in nurses and the methods to be used in an endeavour to reduce this. It is now clearly recognized that nurses, even in general hospitals where tuberculosis is rigidly excluded, run a far greater risk of developing this disease than do comparable members of the general population. Geoffrey Bewley, M.D. Dubl., F.R.C.P.I., F.R.C.S.I., D.P.H.—The Lancet—March 25, 1950.

## STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.

Required by the Act of Congress of August 24, 1912, and as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) of The Delaware State Medical Journal, Published Monthly at Wilmington, Delaware, for October 1st, 1950

STATE OF DELAWARE
COUNTY OF NEW CASTLE } SS

Before me, a Notary Public in and for the State and county aforesaid, personally appeared M. A. Tarumianz, M. D., who, having been duly sworn according to law, deposes and says that he is the Managing Editor of the Delaware State Medical Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation) etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912 as amended by the Act of March 3, 1933, and July 2, 1946, embodied in section 233, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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Editor—W. Edwin Bird, M. D., 822 N. American Bldg., Wilmington, Del.

Managing Editor—M. A. Tarumianz, M. D., Farnhurst, Delaware.

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The Medical Society of Delaware

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M. A. Tarumianz, M. D.
Managing Editor

Sworn to and subscribed before me this 25th day of August, 1950.

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# DELAWARE STATE MEDICAL JOURNAL

**Official Organ of the Medical Society of Delaware**
INCORPORATED 1789

VOLUME 22
NUMBER 11

NOVEMBER, 1950

Per Copy 50c
Per Year, $4.00

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**Entered as second-class matter June 28. 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly.** **Copyright, 1950, by the Medical Society of Delaware.**

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## POSTGRADUATE TRAINING OF THE GENERAL PRACTITIONER*

Laurence L. Fitchett, M. D.,**
Milford, Del.

The late Heywood Broun once wrote: "A clergyman could sleep for twenty years and come back to his pulpit and nobody in his congregation would find him any less adequate in his job than before he went away. I think a lawyer might still get by even after so long a slumber, and I'm sure an editor could . . . . But where would a doctor be if he were ignorant of developments in his profession for even as short a time as five years?"

One of the most common and tragic mistakes made by a physician is to assume, that, with the awarding of his medical degree the completion of his internship and the acquiring of his license to practice medicine, he is a finished product and that his student days are over. Even laymen recognize the fact that it is impossible for a doctor to remain stationary in his profession; he must either go forward or backward.

In Delaware the education of our children in our public schools is in the hands of individuals who are required by law to refresh their training methods and their knowledge at regular intervals by attendance at some recognized school for a stipulated length of time. The health and lives of these same children are in our hands, and the type and quality of the care they will receive is entirely up to us as individual physicians, and I believe this is as it should be.

There have been tremendous changes in the basic medical sciences in the past few years. The science of nuclear physics has opened whole new fields in the study of physiology with the use of tracer elements. We are daily confronted with diseases which were poorly understood a few years ago. The viral infections, infectious hepatitis, the fungus diseases, even coronary thrombosis was infrequently recognized twenty-five years ago.

The degenerative disorders of the body have come into prominence with the remarkable increase in the life span of man in the past few decades. Another field of expanding importance concerns those persons with psychiatric problems. The effect of an individual's environment in precipitating mental disorders is assuming more and more importance in these fast moving times.

But it is in the field of therapy that such tremendous strides have been and are being made. The use of the sulfanamides, the vitamins, and the antibiotics has revolutioned the therapy of disease for all of us. The use of anticoagulants, nitrogen mustards, "tracer" elements, and such drugs as propylthiouracil tolserol and priscoline are illustrative of these changes. Whole chapters of therapy are being written and rewritten with the use of ACTH and cortisone.

All of these changes in medicine are a challenge to the family doctor. More, they demand continuous adjustments in the evolution of medicine as a whole, beginning with the training of the embryo doctor in the basic sciences, through medical school and hospital training and, finally, the practice of medicine itself in one form or another. And although what I have to say is primarily concerned with the general practitioner, much of it can be applied to the specialist as well.

The important problem then, is how best can we transmit these new and everchanging developments, and how quickly to the general practitioner, that he may, within the sphere of his activities make them applicable in his practice? The general practitioner works alone, as a rule, and working alone he engages in practically every branch of medical endeavor—medicine, surgery, obstetrics and gynecology, pediatrics, geriatrics, eye, ear, nose and throat, etc. He must then be kept abreast of those newer concepts in all fields of medicine found worthy by study and trial, and be supplied with these newer implements of his art; and ever and above all, he must be given them as near his particular area of activity as possible and at a time convenient for him to leave his ever present responsibilities.

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*Presidential Address, read before the Medical Society of Delaware, Dover, October 4, 1950.

**Attending Physician, Milford Memorial Hospital.

The most important aspect of the continued post-graduate training of a family doctor is the habit of study in the individual involved. The habit of constant study makes the difference between an ordinary or even a good doctor and what the public calls "a *real* doctor." Finding the time for reading and study in the life of a busy general practitioner is often difficult, but as is often remarked, one can find time to do what one wants to do. This habit, once formed, will be productive of rich results as reflected in the individual's daily work.

Many state medical societies have appreciated their responsibilities in furnishing continued medical education of their members. To mention a few, Pennsylvania and Massachusetts hold one day extension courses in various sections of the state, throughout the year. These are in addition to post graduate courses lasting a week held in Cambridge and Philadelphia. Michigan and Minnesota early established formal programs. Tennessee, North Carolina, and Oklahoma have developed a "circuit" type of instruction in which an instructor or group of instructors makes a fairly complete coverage of at least the rural aeas. In Oklahoma, for example, a capable instructor is chosen; he is granted a leave of absence from the school where he teaches, the salary is paid by the medical society and the year is spent touring the state and spending perhaps a week in each area, covering the instructor's particular subject. Each year a different phase of medical practice is covered and the effort is directed at the general practitioner. In Delaware the recent refresher courses sponsored by the New Castle Society and the Delaware Academy of Medicine are an evidence of our awareness of this problem of continued medical education for the family physician.

The section on General Practice of the American Medical Association was established in 1945. In 1947 the American Academy of General Practice was formed, memberships in which must be renewed every three years and one of the requirements for renewal is at least 150 hours devoted to post-graduate work of some kind during the three year period. The annual sessions of the AMA, and recently the interim session, aimed solely at the general practitioner, the annual meeting of the state societies are all excellent methods of continuing medical education. But there has developed a notable trend along the line of one day extension courses on a regular basis throughout the year, usually by a county or district society. These again should be in some of the small communities as well as the large cities of the state to make it easier and less expensive in time and money for the general practitioner to attend.

Medical schools and their faculties, already burdened with undergraduate teaching, are gradually becoming more conscious of their obligation to make their services more and more available for the continued training of the general practitioner. This has been met in the past by extension courses, panel discussions and in live clinic instructions but these have been carried out either in the medical school or the adjacent teaching hospital and rarely in a section of the state that would make it easier in time and with minimum expense to the general practioner. By means of a coordinated effort between the medical schools and our societies, it might be possible for some of our outstanding teachers to participate in panel discussions and in grand rounds in hospitals in each section of the state for the physicians in that locality and for the general practitioner in particular.

The same might be said of fulltime practicing physicians in the larger non-teaching hospital, men of proven medical scholarship and teaching ability. It might be possible to develop a plan whereby on a regular schedule throughout 8-9 months of the year these teachers could spend a few hours at a hospital in different cities throughout the state making rounds and holding clinics, the days' activities open to all general practitioners in that area.

Another method of furthering postgraduate training would be by the use of the scientific exhibits at the annual meeting of the American Medical Association. These exhibits, graphically presenting the latest knowledge of some aspect of medicine are seen only by those attending the convention. If some plan could be formulated whereby a few of the outstanding ones could be assembled and placed "on the road," so to speak, visiting various cities throughout the country, it might do much to bring newer knowledge quickly and effectively to our general practitioner.

Movies have been used extensively in teaching surgical technique but there is a great field, as yet largely undeveloped, for the development of films on medical subjects and aimed at the general practitioner. The radio is another method of instruction that might be exploited further. Why could it not be possible for the busy practitioner of the future to listen through his radio to a paper being presented by some eminent clinician at a meeting of the Post-Graduate Medical Association, for example?

Why could it not be possible for some of the more interesting discussions or presentations at any of the large meetings to be recorded either on a long-playing record or wire tape? It is hard to conceive of *any* general practitioner who would not be eager to purchase recordings of this type in his particular field of interest. Visual instruction and auditory instruction have a certain advantage over the written page and no more so than at the end of a long arduous day of practice.

In conclusion then, the responsibilities of continued medical education rests upon the medical schools, the medical societies, and the Board of Health. It requires the utilization of all the present methods of postgraduate instruction, plus a determined expansion of facilities already present, especially the utilization of teaching groups from the medical schools and the use of qualified men from the larger non-teaching hospitals. Further, the placing on tour of some of the important scientific exhibits, the use of the movies, radio and recordings should be expanded and exploited to the fullest extent. Finally, it is of the utmost importance to consider the fact that to be effective, continued medical education must be brought to the general practitioner at a place and time that will conserve his time, his finances and above all, his energies—energies so needed for the arduous duties of his ever-busy day.

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## REPORT OF ONE YEAR'S EXPERIENCE AS NEUROPSYCHIATRIC CONSULTANT TO A GENERAL HOSPITAL*

PAUL J. POINSARD, M. D.,
Philadelphia, Pa.

During the period from November, 1948 to December, 1949 inclusive, a total of 120 patients were seen. This includes 22 in-patient consultations (neurological and psychiatric), 16 clinic patients (neurological and psychiatric), 4 neurological out-patient consultations and 2 student nurses who had psychiatric difficulties. Reported here are 97 cases. This excludes 23 patients not classifiable or reportable because of insufficient evidence obtained at one interview.

The total number of patient interviews has been 346. This figure includes consultations as well as those who have continued in treatment. The greatest number of interviews for one patient has been 25. The diagnostic classifications and number of patients seen under each diagnostic heading is as follows:

| | | |
|---|---|---|
| **Involutional Melancholia** | | 11 |
| (a) predominantly paranoid | 2 | |
| (b) predominantly depressed | 8 | |
| (c) predominantly agitated | 1 | |
| **Schizophrenia** | | 7 |
| **Manic Depressive Psychoses** | | 2 |
| **Senile Psychoses** | | 2 |
| **Post-Operative Psychoses** | | 1 |
| **Paranoid Conditions** | | 5 |
| **Psychoses — Undiagnosed** | | 1 |
| **Psychoneuroses** | | 37 |
| (a) depressions (including reactive, post-partem and psychoneurotic depressions) | 8 | |
| (b) phobic anxiety | 13 | |

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*St. Francis Hospital, Wilmington, Delaware. Presented before Staff Meeting, October, 1949.

| | | |
|---|---|---|
| (c) Obsessive compulsive neuroses | 6 | |
| (d) anxiety state and anxiety hysteria | 7 | |
| (e) conversion hysteria | 1 | |
| (f) psychoneuroses mixed | 2 | |
| **Psychosomatic Conditions** | | 7 |
| (a) headache | 4 | |
| (b) peptic ulcer | 2 | |
| (c) spastic colitis | 1 | |
| **Alcoholism** | | 5 |
| **Enuresis** | | 1 |
| **Impotency** | | 1 |
| **Behavior Disorders** | | 2 |
| **Psychopathic Personality** | | 1 |
| **Neurological Conditions** | | 14 |
| Epilepsy | 3 | |
| Intravertebral discs | 4 | |
| Traumatic head injury | 2 | |
| Fractured thoracic vertebra | 1 | |
| Possible cranial neoplasm | 1 | |
| Cerebral vascular accidents | 3 | |

## INVOLUTIONAL MELANCHOLIA

**Age Factors.** The age of onset of involutional melancholia varies greatly. It occurs most frequently in women in their late forties and in men during the late fifties. It is not unusual, however, to see cases occurring in women as early as thirty-five. Certain physiological changes occur during this period particularly in reference to the functioning of the endocrine glands, but the psychological implications are probably more important than the physiological changes in the genesis of the symptoms. The psychological implications relate to threats to the personality by the aging process and all of its connotations; loss of children from the parental home, through marriage and other factors and realization that many of life's wishes will go unfulfilled. Impairment of biological functioning, particularly in the sexual realm is an extremely important contributing factor.

**Pre-illness Personality.** Recent studies have indicated that the pre-illness personality of the involutional cases is not as consistently typical as was heretofore believed, however, certain personality characteristics do occur with enough frequency to be helpful in establishing the diagnosis. A survey of personality traits is apt to reveal that the patient has been an exacting, fastidious, meticulous, over conscientious, penurious person whose demands upon himself and others has been excessive. The pre-illness personality is usually marked by extreme rigidity and the above mentioned traits which represent a reaction formation against aggression.

**Symptoms.** One does not need the presence of frank psychotic symptoms in order to make the diagnosis of involutional depression. The typical early case complains of constant fatigue, usually worse in the morning, disinterest in all activities, irritability, and inability to concentrate. There is physical as well as intellectual retardation associated with the depression. As indicative of the physical retardation and fatigue the patient will often say, "there are many things I would like to do but I just don't have the available energy," or in reference to housework, "things pile up on me and I just don't seem to be able to do anything about it." Retardation in the intellectual sphere presents itself as inability to concentrate. Emotionally the person is depressed and frequently given to bouts of crying. Self accusatory ideas that have their origin in guilt are present and the person feels that he has been a failure as a spouse and parent. He will frequently blame himself for his illness by such remarks as, "to think that I would ever allow myself to get in this condition." Considerable anxiety is provoked because of the person's inability to conduct his life according to his former "galvanized" standards. The importance of early diagnosis in these cases is extremely important because there is no other emotional illness in which suicidal attempts are so prevalent.

**Prognosis.** Without any type of treatment about 40 percent of cases of involutional melancholia recover in a period from one to ten years. A small percentage of mild cases recover with the administration of hormonal substances but the reason for symptomatic relief in these cases has not been accurately established. Since the use of electroshock therapy better than ninety percent of cases show prompt recovery. Groups from which statistical data have been derived invariably include a large percentage of cases that have run the gamut of hormonal therapy prior to receiving electroshock therapy. The patient who manifests depressive features as the largest component of his illness usually has the best prognosis. The prognosis is not so good, however, in those cases with definite paranoid ideation, as manifest by suspiciousness, ideas of reference and delusions of persecution. The more flexible and rigid the pre-illness personality, the poorer the prognosis.

As listed previously, there were 11 cases diagnosed as involutional melancholia, including eight predominantly depressed, two predominantly paranoid and one predominantly agitated. Of the eight predominantly depressed, electroshock therapy was recommended for three, three were seen in consultation, and did not return for further evaluation and treatment and the remaining two were seen in psychotherapeutic interviews for a total of three visits each. Failure to follow-up precludes report on the present condition of the two patients seen in psychotherapeutic interviews. While they professed improvement at the time of their last visit, little permanent improvement can be expected from seeing an involutional patient three times.

Of the three cases in which electroshock was advised one was admitted to a sanitarium under my care. Following four treatments she left the sanitarium, and at last report a year following the treatment she continued to be free of her symptoms of depression and was able to carry on her work as housewife.

Of the two cases predominantly paranoid, institutionalization and electroshock treatment was recommended in both cases. An excerpt from the interview from one of the patients is as follows:

"I don't know whether I'm going crazy or not. I've been upset for six years and I swear it's not my imagination. People are talking about me. I meet people and they actually burst out laughing. I was persecuted by people I worked with, drawers were pulled out and windows opened for some reason. I used to find things in the craziest places. There were three people laughing and carrying on and they may have been responsible for spreading this thing all over the world."

Following six electroshock treatments, she left the sanitarium against advice. At the time of her last visit her general condition was slightly improved but her delusional system generally remained unchanged. She was using the mechanism of denial which enabled her to say, "what's the difference, those people aren't important anyway." This afforded her some relief from anxiety although she had no insight into the delusional nature of her ideas.

Case 2. A 48 year old unmarried woman gave the following history: Two weeks previously a gentleman at work had put his hand on her arm. The next morning upon entering the elevator at work she felt that she was being publicly snubbed. Two mornings later she woke up with the feeling that the entire floor of her bedroom was vibrating. She stated that at this time she felt as if she was hypnotized and it seemed that her whole body had been drained. On occasions she would have to sleep sitting in a chair with her head resting on a table to escape the vibration that seemed to be present. At one time she could hear automobile horns honking in a one-two rhythm that seemed to be referred to her. She had sensations that her entire body was burning up and she felt as if she wasn't going to live through the day. She described a small light similar to that of a flashlight which seemed to be focused upon her hand and upon her head. She often felt that she was in between the electric current from the floor above and the floor below. While sitting at a table she felt a clicking sensation in her back. She was rushed to the hospital and while there her entire body jumped up and down as though she was being shocked all over.

This patient was admitted to a sanitarium where she received combined electroshock treatment and insulin coma. The sanitarium stay lasted about six weeks and she was discharged as improved. She continued to have vague paranoid ideas and numerous somatic complaints but not to an incapacitating degree. A month following discharge she returned to her former place of employment but was unable to remain because of delusional ideas that people were talking about her and discriminating against her. She continued to be seen in psychotherapy for a total of twenty-two visits. At the present time she is free of paranoid ideation, has no somatic complaints and is employed. Electroshock therapy should always be supplemented with psychotherapy.

### Schizophrenia

Seven cases of schizophrenic psychoses were seen. One of these cases was admitted to the state hospital, one was transferred to a hospital where she had been previously treated and on three there was no follow-up. The two who remained in treatment were hospitalized. One improved following a month's period of hospitalization with supportive psychotherapy in a hospital regime with definite schedule, recreation, occupational therapy and a general regime oriented in the direction of helping the person who is emotionally ill. She continues to be seen at two or three weekly intervals. Her condition is considerably improved but her social adjustment continues to be inadequate.

Case 2. In addition to presenting a latent schizophrenic process, presented characterological difficulties and marked retardation of emotional development. Insulin therapy of a deep coma type was begun but had to be discontinued because of severe allergic reaction to the insulin. No improvement has been observed in this case.

### Manic Depressive Psychoses

Two cases of manic depressive psychoses were seen. One case seen in the depressive phase was relieved of her depression following ambulatory electroshock treatment at a general hospital. (Ambulatory electroshock should be reserved for those cases in which hospitalization is not feasible.) The other case was seen originally in a hypomanic state complicated by addiction to alcohol and benzedrine. A short sanitarium stay with psychotherapy enabled her to get along without alcohol and benzedrine. She continued well for several months when she became depressed, had self accusatory ideas, delusions of worthlessness and a delusion that she was pregnant. She was readmitted at a sanitarium for electroshock treatment and following ten treatments was well enough to return home.

### Senile Psychoses

Two cases of senile psychoses were seen in consultation. Little can be offered these patients except the recommendation that they be constantly supervised at home, or if they are unmanageable at home, that they be institutionalized. Electroshock therapy is sometimes effective in helping the agitated senile patient to become a better hospital citizen.

### Alcoholism

Five cases of over-dependence on alcohol to varying degrees were seen in consultation. None of these cases continued in treatment. Three of the five suffered from a marked psychoneurosis sufficient in itself to warrant psychiatric treatment. A person suffering from alcoholism will not profit from psychiatric treatment until he reaches the point himself where he wants to stop drinking and when he realizes that he needs help with his illness. Even then, the percentage of "cures" is relatively small. While good results have been reported in some circles by the use of antabuse, deaths and severe toxic reactions have been reported. To avoid toxic reaction the patient merely refrains from taking his daily pill if he desires to drink. While much work has been done on the condition reflex treatment and bio-chemical sensitivity concerning addiction to alcohol, it is unlikely that the alcoholic person will remain "cured" until he has resolved the emotional conflict which expresses itself in terms of a need for alcohol. Certainly Alcoholic Anonymous deserves great credit for their work with these people.

### Psychoneuroses

**Depression.** Eight cases of depression were seen, including reactive, post-partum, and autonomous psychoneurotic depression. In this group electroshock therapy was recommended in four cases. Two of the four cases with post-partum depressions have remained symptom free up to the present time following this type treatment, supplemented with psychotherapy. One case of reactive depression was admitted to the State Hospital for electroshock treatment and follow-up report indicates that she is symptom free. The fourth case in which electroshock treatment was advised had a complete remission following three electroshock treatments but in a period of two or three weeks relapsed slightly as would be expected from insufficient treatment. The remaining four cases of depression all admitted some improvement in short term psychotherapy.

**Phobic Anxiety.** Thirteen cases were seen in consultation. The largest number of cases of psychoneurosis seen fall under this classification. Originally Janet included under the term psychoasthenia, all cases of obsessive neuroses, compulsive neuroses and phobias. While the diagnosis of psychoasthenia continues to be included as accepted nomenclature by the American Psychiatric Association it is a diagnosis that is rarely used. The tendency is to diagnose these cases in accordance with the predominant feature, namely obsessive, compulsive, or phobic. The person with phobias tends to displace his anxiety onto some external object. By the use of the mental mechanism known as displacement he externalizes in an attempt to get rid of an internal fear.

At this point let us consider how anxiety is handled in the most common types of neuroses. Anxiety is liberated primarily from within the personality itself, but is often precipitated by an emotionally traumatic external event. The manner in which the individual attempts to handle the anxiety determines to a large extent the type of psychoneurosis. When anxiety, this overwhelming feeling of apprehension, remains ''free floating'' the neurosis is classified as anxiety neurosis or anxiety state. If the anxiety is converted into somatic symptoms in the viseral, motor, or sensory sphere, the patient has a conversion hysteria. In compulsion neurosis the patient controls his anxiety by repetitive activity. This activity or ritual protects the patient against the threat of repressed impulses. In phobias the anxiety is handled by displacement from its original source onto some external object.

Examples of phobias complained of are fear of heart disease, fear of cancer, fear of germs, fear of pregnancy, fear of riding in an elevator, fear of killing someone else, fear of killing themselves, and an extremely common fear of having a nervous breakdown or fear of insanity. Fears of scissors and knives are not uncommon. Like the obsessive idea a phobia thrusts itself persistently into consciousness. Since morbid anxiety always accompanies the phobia the patient is constantly depressed. In general one might say that the patient is attempting to externalize and get rid of an internal fear. While he may realize that his fears are irrational he is usually not aware of their psychological significance and is quite unable to regulate his life except as dictated by his phobias. The real source of the fear might come for example from his own aggressive impulses or the fear of a threatening father.

Mild cases of phobic anxiety occasionally respond well, temporarily at least, to reassurance and explanation of the psychopathology. This type remission occurred in four cases thusly treated and follow-up revealed that they are not currently incapacitated by their phobias. It is possible that at some future date the phobia will reappear in its original form or in some other form. Two cases are continuing in an analytic type of treatment with marked improvement in both cases. In the seventh case because of a large depressive component associated with fear of heart disease, electroshock treatment was recommended. The patient was unable to follow through with the recommended number of treatments and upon discharge from the sanitarium her depression was relieved but her phobia continued unabated. The remaining six were seen only in consultation and were not able for various reasons to continue in psychotherapy.

**Obsessive-Compulsive Neuroses.** Six cases were seen in which the predominant feature of the neurosis was that of obsessions and compulsions. As previously mentioned, the obsessive-compulsive state is related to phobic states and it is in this group of psychoneurosis that the prognosis is the poorest even in long term analytical treatment. Electroshock therapy or insulin coma is not effective in this type illness, except perhaps to temporarily cloud consciousness making the patient more comfortable during the period of time that the clouding exists. Such a patient may become more accessible to psychotherapy while receiving electric treatment.

The decompensated obsessive-compulsive neurosis usually becomes schizophrenic if the patient's defenses fail. Out of six cases seen, four cases were unable to continue with psychotherapy. Of the two remaining one is currently in a sanitarium receiving electroshock therapy with improvement. This is a young married woman with marked schizophrenic features that justifies a trial with this type therapy. The other case is that of a woman in the involutional period who is being seen in a supportive therapeutic regime in an effort to help prevent a recurrence of a psychotic reaction which she experienced several years ago.

### Paranoid Condition

Five cases were best classified under this diagnosis. It is likely that most paranoid conditions are basically schizophrenic but because of the following reasons these cases were not given that diagnosis. With the exception of delusions of persecution, ideas of reference and associated suspiciousness, these patients in other spheres are in good contact with reality. They exhibited good ego strength, did not manifest evidence of regression and generally did not display the typical preillness schizoid personality. One of these patients remained in short term therapy, was seen a total of fifteen times and at present has been able to return to the employment from which she had been absent for two years. The second case, dropped out of treatment when he began to realize that an ''affair'' that he had been carrying on for years might have something to do with his delusions.

One woman was referred by an opthamologist because her glasses were unsatisfactory. She complained of visual difficulties, headache, sore eyes, blurred vision, particularly when reading and inability to ''get off the first line.'' She had no visual difficulties in the shade, at night or in dim light but was unable to read in bright lights and could not tolerate bright lights in the room. In further discussing her interpersonal relationship it was found that she had few friends. She felt that most of her in-laws were discriminating against her and were jealous of her possessions. She admitted that for the past year she had been extremely tense and irritable and become easily upset. Bright lights represented ''ideas of influence'' which are not uncommon in a paranoid person. When she discovered that her eye symptoms might well be on the basis of ''nerves'' she became antagonistic to the referring doctor for prescribing glasses.

The fourth case was that of an elderly woman who complained of hearing noises in both of her ears. Reassurance and mild sedation has been helpful in keeping her comfortable.

The fifth case was seen in consultation and did not follow through with recommended psychotherapy.

### Psychosomatic Condition

The diagnosis of psychosomatic conditions has been reserved for those cases in which a particular organ or body system was involved.

**Headaches.** Four cases were seen in consultation. Headaches occur not infrequently in association with obsessive and compulsive neuroses and in such cases inquiry into the mental status of the patient will go far in explaining their etiology. In these cases the patient will frequently say, ''My mind feels exhausted'' or ''There is a clicking feeling in the back of my neck when I turn my head.'' Vague symptoms of pain or discomfort in the occiptal region is often associated with this type neurosis.

**Peptic Ulcer.** Ulcer symptoms frequently appear in connection with intense oral receptive tendencies, the wish to be taken care of and loved. These strong oral receptive tendencies are usually rejected because of their incompatability with the ego's wish for independence. Outwardly these patients appear efficient, active and productive. They will say that they give to everybody, help people, and like to have people depend upon them. The unconscious attitude, is exactly the opposite and we find an extreme and violent need for love and the need for dependence and help. These tendencies are repressed and denied by the patient and productive of conflict—a conflict between giving and receiving. The basis of the symptoms from a dynamic standpoint are rejected and repressed oral receptive and oral aggressive tendencies which are transformed into the former pattern—into the wish to be fed and to eat. The dysfunction of (1) receiving and (2) taking is the result of these tendencies causing chronic psychic stimulation of the stomach independent of the process of nutrition. One case of peptic ulcer was seen in consultation. The second case was that of a young adult male with the problem of obesity, chronic gastritis and questionable demonstrable peptic ulcer. Following short term therapy of approximately ten visits, he lost weight, gastric symptoms improved and he possessed effective insight into the nature of the symptoms.

**Spastic Colitis.** One case of spastic colitis was seen in consultation. While most gastric cases deny their wish for dependence and their receptive tendencies, these colitis patients will say that they do not receive from others in turn for their own generosity and willingness to help. In effect they believe they have the right to take and demand because they give sufficiently. There is no guilt or inferiority on account of their receptive and grasping wishes because they feel they are giving something in exchange. Dynamically the background of the symptoms include the wish to make amends for aggressive tendencies and the wish to be active and aggressive in the ejective "and not oral receptive way." These factors serve as permanent irritation of the peristalsis independent of the digestive functions. Diarrhea serves as a substitute for giving of real values, for making real efforts and being actually active, and for being aggressive. Repressed hostility that originates from earlier feelings of parental rejection frequently plays an important part in the psychopathology of spastic colitis.

### Enuresis

One case of enuresis was seen in a twelve year old boy in which extensive studies did not reveal organic etiology. Dynamics involved led to aggressive tendencies brought about by sibling rivalry and an over-demanding mother. Therapy was given in the direction of relieving anxiety on the part of the frightened child and re-education of the mother as to proper mental attitudes concerning the problem. Marked improvement of enuresis has been noted.

### Impotency

One case of impotency was seen without obvious evidence of associated psychoneurosis in a thirty-five year old married man. Because of resistances and attitudes on the part of the patient which precluded more investigation hypnotism was attempted during the third interview. He returned twice for reinforcement of hypnotic suggestion and his subsequent failure to return makes follow-up report impossible.

### Behavior Disorders—Psychopathic Personality

The two cases of behavior disorders and one case of psychopathic personality were not continued in treatment. In both cases of behavior disorder it was recommended that the parents receive psychiatric guidance in order to deal more effectively with the existing problems.

The primary purpose of this report has been to acquaint the staff with the activities of their psychiatric consultant over a twelve month period. When one considers the number of patients seen, the scope of their disabilities and the possibility of their rehabilitation through psychiatric methods, it becomes apparent that the modern general hospital in order to fulfill its obligation to the patients and the community should make every effort to obtain an active psychiatric staff and adequate facilities for in-patient care and treatment. By such measures the dignity of the patient is preserved and the psychiatrist has a better opportunity to work in close liaison with the staff toward a complete diagnostic and therapeutic program.

*2031 Locust Street.*

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## CONGENITAL STENOSIS OF THE ILEUM

G. S. Serino, M. D.,*
Wilmington, Del.

Congenital stenosis of the ileum is a relatively uncommon lesion. Ladd and Gross[1] in their textbook "Abdominal Surgery of Infancy and Childhood" reported only seven cases. Of these seven cases five died following operation. Griffith and Mitchell[2] stated that the prognosis in these cases is always grave.

Congenital stenosis of the ileum is the result of an arrest in the development of the embryo. Prior to the fifth week of fetal life the intestine presents a lumen lined with epithelium. Between the fifth and twelfth weeks the epithelium proliferates and the intestinal lumen is changed into a solid cord. By the twelfth week the solid intestinal cord has become vacuolized. This process re-establishes the intestinal lumen. An arrest of development during the stage of vacuolization results in intestinal stenosis. This septum of tissue which remains within the intestinal lumen is perforated in only one small point. Stenosis may occur at any point in the small bowel. If the septum across the bowel remains and is not perforated it is known as atresia.

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*Attending Surgeon, St. Francis Hospital.

### Case Report

W. W., record no. 104, a two year old colored male entered the St. Francis Hospital on January 13, 1950 because of abdominal distension, persistent vomiting, and abdominal pain of three days duration. The child was admitted on two previous occasions to this hospital. First admission was on March 3, 1949 with bronchopneumonia. The second admission was on December 27, 1949 because of abdominal pain, diarrhea, and vomiting. At operation performed by another surgeon, the appendix and an acutely inflamed gall bladder were removed. The child was discharged on January 10, 1950. Three days later, on January 13, 1950 this child was again admitted to the hospital, at which time I was asked to see the patient.

The positive physical signs were limited to the abdomen. A generalized abdominal distension was present. Tenderness was present over the abdominal scar. Peristaltic sounds were slightly hyperactive. Rectal examination was negative. Dehydration was evident. His temperature was 99.6° F., pulse 110, respiratory rate 28.

Laboratory studies revealed a white count of 9,800, with 54 per cent neutrophils, 44 per cent lymphocytes, 2 per cent monocytes. The red cell count was 3,200,000 with 7.5 grams of hemoglobin. No sickle cells found. Serum protein 5.8. Urine analysis showed a slight trace of albumin. Stool cultures were negative for typhoid-dysentery group of bacteria. Stools were negative for occult blood.

Roentgen ray examination of the chest was within normal limits. Flat plate of the abdomen showed marked distension of the loops of both small and large bowel.

A diagnosis of intestinal obstruction was made and preoperative measures were instituted. These consisted of blood transfusions, intravenous glucose and water, vitamins, antibiotics, and the introduction of a Miller-Abbott tube.

On January 17, 1950 laparotomy was performed. The ascending colon was adherent to the previous operative area. This was released and the denuded serosa was sutured with fine silk. The small bowel, which was quite distended in this area, was followed downward to a point about twenty inches from the ileocecal junction, where the bowel was collapsed. A very small Meckel's diverticulum was present, and about two inches below this area a definite septum was palpable in the bowel causing a complete obstruction. A side-to-side anastomosis was rapidly performed by bringing together parts of bowel immediately above and below the area of stenosis.

Postoperative treatment consisted of parenteral fluids, gastric suction, blood and antibiotics. Feeding by mouth was started on the fourth postoperative day. Bowel movements became normal. The abdomen was entirely normal five days following surgery.

### Summary

1. A case of congenital stenosis of the ilium, which was cured by operation, is presented.
2. A brief outline concerning the genesis of this entity is presented.
3. This child survived two major surgical operations performed within a period of three weeks.

### REFERENCES

1. Ladd and Gross: Abdominal Surgery of Infancy and Childhood. Philadelphia: W. B. Saunders Company, 1947, p. 52.
2. Griffith and Mitchell: The Diseases of Infants and Children. Philadelphia: W. B. Saunders Company, 1933, p. 615.

## NERVE BLOCKING—A REVIEW

John J. Graff, M. D.,*
Wilmington, Del.

The experience of one anesthesiologist with nerve blocking is easily reviewed by consideration of a number of patients as seen in regular practice of anesthesiology. It is proposed in this paper to review 100 nerve blocks done consecutively on unselected cases seen in consultation. Even a small statically-unimportant series can support impressions of the value placed on this type of therapy in various conditions. Cases are broken down into groups:

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*Anesthesiologist, St. Francis Hospital.

| No. of Patients | No. of Blocks | Diagnostic Group |
|---|---|---|
| 18 | 33 | Cerebral Vascular Accidents |
| 7 | 17 | Causalgia |
| 7 | 15 | Intercostal Neuralgia |
| 7 | 10 | Thromboangeitis |
| 3 | 6 | Anterior Scalene Syndrome |
| 2 | 6 | Atypical Facial Pain |
| 6 | 11 | Miscellaneous |
| 2 | 2 | Thrombophlebitis |

The group of cerebral vascular accidents is the largest in this series and I feel it should be even larger. Some of these patients are helped in a startling manner. In this number eight of the patients were considered to have derived definite benefit from the procedures. Several patients with long-standing disability responded to treatment. Improvement within minutes of paralysis and aphasia present for months without change has been encouraging the infrequent times it has been seen. A successful case that was attempted with misgivings opens up whole fields of speculation. One patient with little but confusion seemed to clear after injection, but therapy was not continued. No change was seen for several months and at autopsy there was no gross brain damage. Age seems to be no absolute contraindication, as can be said of established subarachnoid hemorrhage. One patient with grossly bloody spinal fluid recovered from coma and went on to a good return of function, improvement being seen minutes after injection.

Some of the worst cases listed as failures have shown serious results to be reversible. One patient who recovered from an accident except for inability to swallow began to recover completely following treatment. It may be that accurate prognosis can be given following blocks if a definite improvement in paralysis results but this is completely temporary. Patients have been seen where the immediate return of function has been exactly the return of function seen of a permanent nature many months later. Caution must be used to predict the completeness of recovery when improvement is seen immediately.

The causalgia group can be one of the most gratifying. In the patients who adjust well to the treatment when carefully given, the results are definite, immediate, and often dramatic. The pertinent fact is that the treatment for some patients is worse than the disability. The discouraging truth here is that some of the cases that are helped the most cannot go on with the therapy. Thus we see here a group diametrically opposed to our next group. These people are clearly helped and their period of disability shortened and yet it may not be at all apparent to the patient. These patients should have nerve blocking done even though priscol or related drugs have been tried with no success. Some of our clearly improved patients had not responded to these drugs before. The benefits of blocking may be self-limited in the protracted cases, but vascodilators have not proved an effective substitute.

The group of intercostal neuralgia cases seems fated to decrease in size. There patients, as are all in the series, are referred by doctors for specific therapy often without diagnosis ruled out. They do not improve but often are trying these extreme methods as a last resort and convince themselves and the unwary doctor that treatment should be continued. The real need in these cases is for the doctor who sees the patients in consultation to refuse these cases for block therapy and have further attempts made at diagnosis. Technically these patients can be difficult to do accurately, as they are anxious to help and unwittingly give misinformation about paresthesias and the extent of areas of anesthesia, etc. The best plan seems to be one of objective evaluation with the patients' cheerful impressions being minimized. As contrasted with the previous group these patients are eager to continue blocking, suggesting additional nerves to be tried.

The small number of cases of anterior scalene syndrome are peculiarly representative of the three types of cases seen. One was injected with no change noted and was immediately referred for further diagnostic study. The next was injected with complete relief that was temporary and not progressive when repeated. When injection with saline have no relief, the muscle was divided and complete relief resulted. The third case had been already injected two years previously and had no symptoms in that interval. Injections were repeated with progressive improvement and symptoms were gone after the third injection.

Thromboangeitis patients improve after this and accompanying therapy, and careful blocking can determine accurately the cases that will improve on conservative measures or after sympathectomy. The blocks are often valuable where vasodialtors have been inconclusive.

The cases of atypical facial neuralgia had been studied and treated extensively and the most to report is doubtful improvement after stellate ganglion block. Other cases of this type have been more encouraging, as have been many conditions in which circulation has been involved by something that can be overcome by nerve blocking.

The thrombophlebitis cases in this instance showed no improvement and this is held to be rather atypical, as this condition often responds to this therapy. The veins involved here appeared to be the superficial femoral and the subclavian, and not the more usual sites.

The miscellaneous group included one patient with tic doloreux with operation refused, but with pain relieved by alcohol injection. One case of acute subdeltoid bursitis obtained gratifying relief. Blocks were done on a physician with occlusion of the retinal artery, with questional temporary improvement and no permanent help. Caudal injection for perineal pain from spine metastasis gave only temporary relief. Pain in the Achilles tendon at rest was not helped, and exploration was done. Embolus of a digital artery was not improved by stallate block.

### SUMMARY

For someone who can endure the many failures and enjoy the few dramatic results, nerve therapy can be a definite adjunct in the treatment of a wide variety of difficult cases.

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## MORE RESEARCH ON TUBERCULOSIS

G. TAGGART EVANS,*
Wilmington, Del.

**Help Fight TB**

**Buy
Christmas Seals**

Recent tests to find out what types of news stories and articles are most popular among newspaper and magazine readers revealed that science and medicine are among the favorite subjects.

The results of these reader tests are indicative of the growing interest on the part of the general public in the remarkable scientific developments of our age. It is a healthy interest, based on a desire to keep apace with discoveries and advances in the scientific world which have an immediate or potential bearing on the lives of all of us who comprise the "general public."

What could be more natural than for you and me to know to what uses the atom bomb may be put? To know what the possible consequences are of the production of the more powerful hydrogen bomb? To know whether a remedy has been found for the common cold? Or if, at long last, a drug has emerged as the conqueror of that age-old enemy, tuberculosis?

Perhaps one reason that we are taking such a keen interest in scientific and medical advances is that such astounding progress has been made in these fields in recent years that we are expecting new "miracles" almost daily. And because of our faith in the scientists of today we are gladly making greater funds available for them to continue research which may one day bring untold benefits to mankind.

In the spirit of the times, the National Tuberculosis Association, with which the Delaware Anti-Tuberculosis Society is affiliated, recently decided to expand its medical research program. Expansion of the program is assured by an increase in the allocation of funds to the NTA by the Society and the 3,000 other affiliates of the National.

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*Executive Secretary, Delaware Anti-Tuberculosis Society.

The work of all the tuberculosis associations is supported principally by proceeds from the annual sale of Christmas Seals which this year will be conducted from November 20th to Christmas.

Beginning with the 1950 Christmas Seal Sale the Delaware Anti-Tuberculosis Society will send six per cent of the money raised to the National. Of this six per cent, one per cent is earmarked for medical and social research for the fiscal year beginning next April 1. Thus, when you and I buy Christmas Seals this year we shall know that we are contributing to research on tuberculosis at least to the extent of one per cent of our contribution. We shall know, too, that 94 per cent of our subscription will be used within our own state to promote the projects directed at eradicating this communicable disease within our own state.

Research is by no means a new activity of the tuberculosis associations. Through the National organization the associations have for years helped support the work of an increasing number of scientific investigators.

Each year a certain sum has been set aside by the National from its Seal Sale allocation for research and, furthermore, a number of state and local associations have made special contributions for research.

The current research progress of the NTA and its affiliates has made possible grants to aid 26 investigators who are engaged in five main fields of research: clinical research; the chemistry of the tuberculosis germ; bacteriology; immunology; and the pathology and pathogenesis of tuberculosis.

Investigations with patients include studies to determine more accurately than is known at present the true role of bed rest in treatment. Another study is on the course of tuberculosis in children, and still another is concerned with the use of certain drugs in tuberculosis treatment.

A chemistry study, long under way, has resulted in the breaking down of the tubercle bacillus into its chemical components. Basic facts revealed from this study have had practical application in such procedures as tuberculin testing.

Two studies in the field of bacteriology are on the genetics of the tubercle bacillus. Through these investigations valuable information is expected to be gained on the development of resistance to drugs on the part of the germ and on the factors responsible for the virulence of the tubercle bacillus.

In the research on immunology both native and acquired resistance to tuberculosis are under scrutiny.

Under pathology and pathogenesis, studies are under way to determine the factors which cause a diseased lung to caseate and liquify, thus leading to the spread of the disease; and on the problem of calcification in tuberculosis and other diseases.

In addition to the grants to aid investigators, the tuberculosis associations, through the NTA, are also each year awarding a number of teaching and research fellowships to encourage young investigators to devote their talents to the tuberculosis field.

Since it inaugurated its medical program nearly 30 years ago the policy of the NTA has been to use what funds were available for research to aid qualified investigators who have at their disposal adequate facilities to carry on their work. In other words, the Association has not attempted to set up independent projects which might call for the equipment of laboratories, but instead has used its funds to enable men with ideas and facilities to pursue studies which promised to enhance our knowledge of tuberculosis and how to fight it.

The social research program of the National Association includes special studies on the relationship between economic status and tuberculosis, the economic costs of the disease, and the follow up of former patients to determine how they make out, both physically and economically, after leaving the tuberculosis hospital.

The entire research program is administered by the NTA's medical section, the American Trudeau Society, which has a membership of approximately 4,000 outstanding specialists in chest diseases. Among other responsibilities of the ATS are the evaluation of new procedures reported effective in tuberculosis prevention and treatment. As an example, a special committee has been studying BCG, the vaccine which has been used with some success in creating immunity to tuberculosis. The ATS has recommended its use for certain groups unduly exposed to tuberculous infection, but, because of many as yet unknown factors, not for the general public.

Whether or not from research now under way a specific cure for tuberculosis will one day be found—a drug which will be to tuberculosis what penicillin is to pneumonia—no one would dare predict. Tuberculosis is a stubborn disease and even streptomycin, most promising of the drugs now used in TB treatment, is not a cure.

But whether or not a drug is found, we do know that benefits will be reaped from the current research on tuberculosis — that the physician, the laboratory technician, the public health worker, will be aided in the treatment, the diagnosis, and the promotion of the prevention of tuberculosis.

And we who have formed the habit of buying and using Christmas Seals can be proud that we have helped make possible the work of the scientific investigator who is devoting his skill to shedding light on the No. 1 killer among infectious diseases to the end that this sower of needless suffering and destruction can be wiped from the face of the earth.

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## Committee on Trauma
## American College of Surgeons
## THE CARE OF HAND INJURIES
## IV
### LACERATED WOUNDS

I Protection of the Hand (Abstracted from THE JOURNAL, June, 1950.) — The first-aid care of wounds of the hand is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. The best first-aid management consists in the application of a sterile protective dressing, a firm compression bandage and immobilization by splinting in the position of function.* No attempt should be made to examine, cleanse, or treat the wound until operating room facilities are available.

II Requirements of Early Definitive Treatment (Abstracted from THE JOURNAL, July 1950.) — Early definitive care requires thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first-aid treatment and appraisal of structural damage. For undertaking the definitive treatment the conditions required are a well-equipped operating room, good lighting, adequate instruments, sufficient assistance, complete anesthesia, and a bloodless field. Treatment itself consists of aseptic cleansing of the wound, removal of devitalized tissue and foreign material (exercising strict conservation of all viable tissue), complete hemostasis, and the repair of injured structures, to be followed by protective dressing to maintain the optimum position. Aftertreatment consists of protection, rest and elevation during healing, and early restoration of function by directed active motion.

III SURFACE INJURIES (Cf. THE JOURNAL, October, 1950.)

III Surface Injuries (Cf. THE JOURNAL, October, 1950.)

### IV LACERATED WOUNDS

Lacerations may damage skin, fat, fascia, muscles, tendons, tendon sheaths, blood vessels, nerves and, more rarely, joint or bone. The treatment of such injuries has four objectives: 1. protection from infection; 2. restoration of structures; 3. avoidance of deformity; 4. early restoration of function.

These objectives are furthered by proper first-aid care, as outlined in I (Protection of the Hand) and by definitive treatment.

### A — DEFINITIVE TREATMENT

To be undertaken only under the proper conditions and according to the principles outlined in II (Requirements of Early Definitive Treatment). Careful history of the injury should be followed by examination of the hand to determine: 1 location and extent of the wound; 2 source of major bleeding; 3 presence of foreign material; 4 function of tendons, to be tested against resistance; 5 function of intrinsic muscles; 6 condition of nerves as regards both sensory and motor functions; 7 integrity of bone and joint.

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*Position of function or position of grasp; wrist hyperextended in cock-up position; fingers in mid-flexion and separated; thumb abducted and in mid-flexion, with tip pointing toward little finger.

Following anesthetization of the patient and application of hemostatic blood pressure cuff (not to be inflated above 300 mm), definitive treatment of the wound consists of: 1 thorough cleansing of wound region and then of entire hand and forearm with soap and water or bland detergent; 2 removal of foreign material from the wound; 3 careful, gentle, thorough, but conservative excision of devitalized tissues, sparing all structures that may survive; 4 repeated cleansing of wound by irrigation with warm normal saline solution; 5 securing and ligation of divided blood vessels.

These general measures are followed in appropriate cases by repair of damaged structures. Proper wounds for this repair are: 1 those in which infection has not become established; 2 those not grossly contaminated by highly infective material; 3 relatively clean wounds not more than three or four hours old.

In general, wounds not fulfilling these criteria are better left unrepaired to await secondary closure and later reconstructive surgery. They should, nevertheless, be as carefully cleansed of foreign matter and dead tissue as are those prepared for primary closure. In such cases severed nerve ends may be identified with nonabsorbable sutures or lightly united.

Repair of damaged structures: 1 nerves: a. all severed nerves should be repaired, including the digital nerves; b. fine arterial silk on fine needles should be used, accurately approximating the nerve ends by small interrupted sutures placed around the periphery. These sutures should include only the perineurium, not the nerve bundles. It is important to avoid axial rotation, particularly in nerves having both motor and sensory function; c. nerves are to be distinguished from tendons, especially at the wrist, by their anatomical position, softer texture, pinker color, small surface capillaries, and distinct nerve bundles seen on cut ends. Pulling on a nerve will not flex a finger; d. nerves should be handled gently, never crushed, rubbed, or allowed to become dry.

(2) Tendons: a. all severed tendons should be repaired, including the tendons of intrinsic muscles.

An important exception to this rule concerns flexor tendons severed within the flexor sheath or in the digital flexor canal. Primary suturing of the flexor profundus in this location rarely succeeds in restoring useful function even if the flexor sublimis is removed. Suturing both flexor sublimis and profundus in this area almost invariably results in failure. Should even minor infection occur, failure is assured. With rare exceptions, it is sound practice to repair the skin and digital nerves only, leaving the flexor tendons for secondary reconstruction when severed in this region. b. nonabsorbable sutures of silk or wire are used accurately to approximate the severed tendon ends after they have been cleanly squared off with a sharp knife. c. additional incisions to secure retracted tendon ends should follow flexion creases. They should be curved or transverse, never longitudinal, and never in the palmar or dorsal midline of a finger. d. tendons should be handled gently; never crushed, rubbed, or allowed to become dry.

(3) Muscle: a. severed muscles should be lightly approximated with interrupted mattress sutures, avoiding tension and constriction; b. muscle thus repaired should be alive, contractile and vascular, all devitalized shreds being trimmed away.

Following these procedures, the homostatic blood pressure cuff is released to permit identification, control and ligation of bleeding vessels. The field should be dry before closure of the wound.

(4) Fascia: severed fascial and ligamentous tissue should be repaired with interrupted mattress sutures, avoiding tension.

(5) Subcutaneous tissue: subcutaneous fatty tissue may be lightly approximated with interrupted fine sutures.

(6) Skin: the skin should be closed with fine, nonabsorbable sutures.

(7) Dressing: firm pressure dressing is applied, the fingers being separated, with gauze between them. The hand is immobiliz-

ed by splinting in the position of function, except when suture of severed tendons requires splinting in a position to insure the least strain on their suture lines. If nerves have been severed, the position of function is particularly important to prevent deformity due to contracture of active muscles when their opponents are denervated and paralyzed.

### B—Aftercare

(1) Antibiotics and tetanus antitoxin (or toxoid) are administered systematically as prophylaxis against infection. (2) The extremity is kept elevated for the first three or four days. (3) Dressings are not removed for several days, usually one week, unless infection develops. (4) The healing of severed tendons and nerves requires three weeks of uninterrupted immobilization; (5) When nerves are severed, corrective splinting is necessary until reinnervation of paralyzed muscles has occurred; (6) Restoration of function is best secured, after healing, by directed voluntary exercise and appropriate occupational therapy.

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Every community is entitled to safe water, food, and milk, and protection from unsafe disposal of wastes; to as safe an environment as we know how to provide including pure air; safe streets, homes, places of work, and places of education and recreation; to the best protection we know how to provide from the contagious diseases, including tuberculosis and the venereal diseases; access to good medical care and hospitalization when needed; to the best protection we know how to provide against the special hazards of maternity and infancy; to the best facilities we know how to provide for the healthy development of our children, including correction of crippling physical and mental defects; recognition and treatment of rheumatic fever and other heart disease, and to the knowledge and facilities necessary to prevent as many deaths as possible from cancer, heart disease, diabetes, and the other degenerative diseases.

—William P. Shepard, M. D., Nat. Tuberc. A. Bull., Oct. 1949.

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## NATIONAL ADVISORY COMMITTEE

October 17, 1950

*To the Officers and Members of the Medical Society of Delaware:*

The President of the United States, under authority of Public Law 779, 81st Congress, has appointed a National Advisory Committee on the selection of doctors, dentists, and allied specialists.

Howard A. Rusk, M. D., as chairman of that committee, has appointed a Volunteer Delaware Advisory Committee on the selection of doctors, dentists, and allied specialists.

The chairman of the Delaware Committee is authorized to appoint (subject to confirmation by the National Committee) such additional members, or sub-committees, as may be necessary to carry out the functions of the committee.

The responsibilities of the Delaware State Committee are:

(1) To establish and maintain liaison with the State Director of Selective Service.

(2) To advise the Selective Service System concerning the classification of individual members of these health professions who are subject to classification by Selective Service boards.

(3) To be responsible for carrying out within the state policies established by the National Advisory Committee.

In compliance with the foregoing it will be necessary for the committee to obtain and file certain information concerning all persons who practice medicine in the state of Delaware.

The committee earnestly solicits the active cooperation of every member of the medical profession by completing and returning questionnaires promptly, and in all other measures, as they are brought to its attention.

Fraternally,

Floyd I. Hudson
Robert R. Layton, Jr.
J. Paul Winthrop, D.D.S.
Alfred R. Shands, Jr., *Co-Chairman*
Victor D. Washburn, *Co-Chairman*

# + Editorials +

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

Vol. 22 November, 1950 No. 11

## Concerning Character

The election last week was a definite setback to the creeping Socialism which has been ravaging this country for the past 17 years. This slap-down, long overdue, came as a result of the disgust and distrust of the electorate concerning both the foreign policy and the domestic policy. On the domestic side, the results mean a two-year breathing spell, for the medical profession, from the crackpots who want state medicine and the so-called welfare state. Among the potent factors that won this beach-head was the persistent campaign of education by the American Medical Association, which was conducted along the highest ethical standards, with provable facts and figures; in other words, it had character.

The *Baltimore Sun*, an avowedly "Independent Democratic" paper, (on November 11th), makes some pertinent remarks concerning character in an individual, and well may *The Sun* speak of character—it has it itself. Let us quote:

> **THE MOST IMPORTANT THING ABOUT TUESDAY'S OHIO ELECTION**
>
> Something of importance happened in Ohio on Tuesday. Mr. Taft got the biggest vote ever polled for any senatorial candidate in that State. He carried every major industrial area in the State, including Cleveland. He did this against the combined pressure of every labor outfit in the United States and every national labor magnate, against the entire push of the Truman Administration and against the unanimous opposition of the whole Marxoid-Pinko-Socialist-"liberal" crowd in the Republic.
>
> Senator Taft lacks a soothing radio presence. At electronic firesides, phony or genuine, he is as near to being a dud as a man can get. His lack of masculine beauty is spectacular. As a baby kisser he is awkward. His voice is flat, nasal and in some of its timbres reminiscent of *Donald Duck*. His advocacy of give-away programs has been practically nil. The Senator's garb is undistinguished and he wears it in an undistinguished manner. He offers nothing to the electorate except brains, industry and character—especially character. That seems to be enough.
>
> But the story of Senator Taft in Ohio in the year 1950 cannot stop there. Not yet stated is the main issue which lined up the whole Marxoid-Fair Deal-Pinko-Socialist-Labor-"liberal" crowd against Mr. Taft. What was the Taft abomination in the eyes of these people? It was Senator Taft's insistence after fourteen years of labor lawlessness that labor be brought back under the same rule of law that applies to the rest of us.
>
> It is the statement of the main anti-Taft issue that brings us to the big climax and the real triumph of the Taft story. For Taft was re-elected senator in Ohio *by the votes of workingmen.* It could not have been otherwise. The anti-Taft crowd had figured on labor majorities in the industrial areas of the State to overwhelm the main author of the Taft-Hartley law. Instead, as stated at the beginning of this piece, the labor majorities went to Taft. The Ohio workingmen, that is, were American citizens before they were labor men. And as American citizens they naturally agreed that labor ought to be under the rule of law governing Americans in general.
>
> That agreement is the really important thing that happened in Ohio on Tuesday. For what is true of Ohio workingmen is, of course, true of workingmen everywhere in the United States.

By way of contrast, the *Wilmington Sunday Star,* in its leading editorial on November 5th, came from behind its cloak as an "independent," and appeared as a frankly "Democratic" organ, begging the voters of Delaware to vote Democratic. While we could pick that editorial to pieces paragraph by paragraph, let us quote just one paragraph:

> The Republican Party goes a long way towards making the same kind of promises the Democrats make. They say, in effect, we'll do much the same as they, but we'll do it better, and, above all, more economically.

Now, the man who wrote that editorial, we are convinced, knew better. He certainly must have known that the Republican platform in this state contained a pledge to oppose the socialization of medicine. We say he must have known better, for political editorials are not written without full knowledge of both platforms.

This JOURNAL is *not* in the business of politics; it *is* now and always—in the business of preserving the private practice of medicine in the American way, with its unmatched results. But now, despite *The Star,* the electorate has made it plain that they too do not intend to give up this, the most efficient way, and that they will not swallow any longer a lot of other pinkish proposals.

For 27 of the 35 years we have been the Editor of the DELAWARE STATE MEDICAL JOURNAL *The Sunday Star* has been our printer. We have rejoiced in its independence—and because thereof have quoted it on many occasions, which makes us regret all the more its apparent stepping out of character. Or was this merely a slip that is not to be repeated? What is *The Star*—"independent," or "independent Democratic"?

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## Saline Solution in Burn Shock

The Surgery Study Section of the National Institutes of Health has recommended to the Surgeon General of the Public Health Service that the use of oral saline solutions be adopted as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian catastrophe.

The recommendation followed action taken at the January 1950 meeting of the Surgery Study Section, when such treatment was approved in principle. Dr. Carl A. Moyer, a member of the Study Section, was designated at that time to prepare a memorandum suitable for submission to Dr. Norvin A. Kiefer, Director, Health Resources Division (now Health Resources Office), National Security Resources Board.

Dr. Moyer's memorandum, which was submitted to Dr. Kiefer, February 15, 1950, reads as follows:

"Since the publication of the experimental work of Dr. Rosenthal, Dr. Coller, et al., orally administered salt solutions have been employed in the treatment of burns at the University of Michigan Hospital, Ann Arbor, Mich.; at the Wayne County General Hospital, Eloise, Mich.; and at Parkland Hospital, Dallas, Tex. Personal clinical experience, in the above-named hospitals, has convinced me that the orally administered salt solutions are valuable adjunctive agents in the treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions. Certain factors are important in governing the effectiveness of the oral administration of salt solutions. They are as follows:

"1. The composition of the salt solution: The most palatable salt solution is made by dissolving 3 to 4 grams of sodium chloride and 2 to 3 grams of sodium citrate in each liter of water. If sodium citrate is not available, ordinary baking soda may be substituted for it.

"2. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter. If the concentration is above this, vomiting and diarrhea became important complicating factors.

"3. Whenever profound peripheral circulatory collapse is present, the intravenous route of administration must be used until peripheral blood flow has been reestablished. The salt solutions that we have found most satisfactory for this purpose are Hartmann's solution (Lactate-Ringer's solution) or plasma. In addition to the salt solution or plasma intravenously, whole blood is given concurrently whenever peripheral circulatory collapse exists. This materially implements the effectiveness of salt solutions.

"The slightly hypotonic salt solution is the only drinking fluid permitted the injured individual until the edema of the injured parts begins to subside. Certain exceptions to this rule have to be made during the hot weather of summer when it is sometimes necessary to permit the partaking of some non-salty water.

"As much as 10 liters of the hypotonic salt solution have been drunk in the 24-hour period by adults who have been severely burned. Since salt solution has been substituted for water, as a drinkable fluid, no burned person who has lived for longer than 3 hours after being admitted to the hospital has suffered from anuria. The 'early toxemia phase' of the burns has also failed to appear and the osmotic concentration of the plasma electrolytes has been well maintained.

''We feel that much more clinical observation and actual experimental work should be undertaken regarding the effectiveness of the basic principles of the supportive therapy of burns that have been so beautifully demonstrated by Dr. Rosenthal. It is obvious that the adoption of a more active program of investigation into the relative effectiveness of simple measures to combat shock would be of extreme importance to the Armed Forces and to the civilian population in the event of another war.''

Because of the sharpened national emergency that developed during the summer of 1950, the Surgery Study Section, in approving Dr. Moyer's memorandum at its meeting on September 16, changed the last paragraph to read:

''While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population.''

The Surgery Study Section letter to the Surgeon General, dated September 16, 1950, reads as follows:

''It is my understanding that one of the functions of the Study Sections is to offer advice to the Surgeon General in fields of medicine lying within the special competence of the Study Section members. At the January 1950 meeting of the Surgery Study Section, there was considerable discussion concerning the use of oral saline solutions in the treatment of burns and other serious injuries. It was the consensus of the Section at that time that, on the basis of the animal work which had been done by Dr. Rosenthal of the National Institutes of Health, and the clinical work which had been done by Dr. Carl A. Moyer, by the undersigned, and by others, the efficacy of such treatment had been definitely demonstrated and that, while there is need to stimulate additional research in this field, our present knowledge is sound enough so that action can be taken on this basis. Dr. Moyer was designated to draft a short memorandum expressing our point of view on this subject. Such a memorandum was prepared and furnished to Dr. Norvin C. Kiefer, Director, Health Resources Division, National Security Resources Board, on February 15, 1950. A copy of Dr. Moyer's memorandum is attached.

''In view of the more acute national emergency that has developed since Dr. Moyer wrote this memorandum, the Study Section, at its meeting on September 16, 1950, voted to recommend that the principles of treatment outlined in his memorandum be adopted for widespread use in any large-scale disaster involving the civilian population. Because of the present emergency situation, we have modified the last paragraph of Dr. Moyer's memorandum to read, 'While further clinical research concerning the effectiveness of oral salt solution in the treatment of burns and other injuries is certainly in order, there is already sufficient evidence to suggest that this form of treatment should be used in any large-scale disaster involving the civilian population.'

''You are at liberty to transmit this recommendation of the Surgery Study Section to the National Security Resources Board or to other proper agencies, and, if you see fit, to publish it. We feel strongly that it is important for the medical profession of the country and for those planning for the handling of potential disasters to be informed of the value of this simple and easily carried out form of treatment.''

The letter was signed by Frederick A. Coller, M. D., University of Michigan, Chairman of the Surgery Study Section. Members of the Study Section, in addition to Dr. Coller, are: Dr. Claude S. Beck, professor of neurosurgery, Western Reserve University; Dr. Loren R. Chandler, dean, Stanford University Medical School; Dr. Lester R. Dragstedt, professor of surgery, University of Chicago; Dr. Daniel C. Elkin, professor of surgery, Emory University; Dr. Carl A. Moyer, dean and professor of surgery, Southwestern Medical School, University of Texas; Dr. Harris B. Shumacker, Jr., professor of surgery, Indiana University Medical Center; Dr. Owen H. Wangensteen, professor of surgery, University of Minnesota; Dr. Allen O. Whipple, clinical director, Memorial Hospital, New York City; Dr. H. L. Skinner, chief of surgery, Staten Island Marine Hospital; Dr. Henry Beecher, professor of anesthesiology, Harvard University Medical School; Dr. J. Gordon Lee, chief of surgery, Mount Alto Hospital, Washington, D. C.; Dr. Howard R. Lawrence, chief of surgery, Francis E. Warren Air Force Base Hospital, Wyoming; and Dr. G. Halsey Hunt, Chief, Division of Hospitals, Public Health Service.

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* This does not represent a complete bibliography.

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## PR Conference

The 1950 AMA Public Relations Conference is set for December 3 and 4 in Cleveland, just prior to the Clinical Session of the American Medical Association. It will concentrate on county society programs aimed at increasing community goodwill toward the medical profession. In attendance at the two-day session will be some 300 M. D. chairmen of state and county medical society public relations committees, society executive secretaries and public relations directors, officers of the American Medical Association Woman's Auxiliary and key representatives of allied health organizations.

The program schedule calls for four work sessions, two noon sessions and an evening session. All activities will be at the Hotel Statler.

The opening work session on Sunday, December 3, will take up the important "groundwork for a successful public relations program." On the docket will be discussions on organizing public relations committees, financing the program, techniques for finding out what public relations work is needed, program planning, and ways to build support among society members.

Work sessions on Monday, December 4, will include a timely summary of "county societies and the legislative scene," a series of brief reports on specific worthwhile county public relations activities, and an open forum period during which conferees will divide into three groups to swap ideas with representatives from similar-sized communities.

Appearing at the "legislative" session will be Dr. Dwight H. Murray, A.M.A. Trustee and Chairman of the Committee on Legislation and Dr. Joseph S. Lawrence, Director of A.M.A. Washington Office.

The "activities with a purpose," session will show how county public relations projects have improved community feelings towards doctors. Among the projects to be discussed are "community-minded doctors," "a doctor for every family," "working with other professions," "the doctor and civilian defense," and "let the doctor speak."

On Monday afternoon three discussion groups will be formed to take up medical public relations problems in small communities, medium-sized communities, and metropolitan areas.

Sunday noon, Dr. John W. Cline, President-elect of the American Medical Association, will keynote the Conference with an address on "Serve Your Nation Through Better Public Relations." Speaker at the Monday noon session will be R. W. Mills, secretary of the Fond du Lac, Wisconsin, Association of Commerce. His topic is: "The American Way of Life."

Mid-point of the idea-packed Public Relations Conference will be the annual Conference dinner Sunday evening. Sharing the speaker's platform will be A.M.A. President, Dr. Elmer L. Henderson, and a nationally prominent man outside the medical field. In addition, the program will feature cartoonist Marvin Bradley, one of the creators of the comic strip, "Rex Morgan, M. D."

As a supplement to the regular Conference sessions, two special visual aid demonstrations have been scheduled. One will be a screening of the new Louis de Rochemont film, "M. D. — the U. S. Doctor." The other will be a demonstration of a television package show being produced by the Bureau of Health Education for use by state and county societies.

## OBITUARY

### Harry G. Buckmaster, M. D.

Dr. Harry G. Buckmaster died on September 7, 1950, in the Wilmington General Hospital at the age of 80. He had been ill three weeks. The oldest practicing physician in the city, and probably the oldest in the state, Dr. Buckmaster had continued with his work until his illness.

Dr. Buckmaster was also known as a sportsman, maintaining his own stable of horses which he drove himself as well as entering in all kinds of contests. He was an expert trapshooter, and had a large collection of prizes won in competition.

Dr. Buckmaster, who practiced in Wilmington for 56 years, was born in Woodside, Kent County, on Oct. 3, 1869, the oldest of five children of Charles M. and Mary Paine Buckmaster. He attended the Woodside School and Friends School here, and graduated from the Wilmington High School with the class of 1889. He taught school in Harrington before taking up the study of medicine with Dr. James T. Massey of Canterbury, Del. In 1891 he entered the University of Pennsylvania Medical School, where he received the degree of Doctor of Medicine in 1894.

He established himself in medical practice shortly after receiving his degree, and in 1896 purchased a drug store and moved to 400 East Fourth Street, where he maintained his headquarters for half a century. During this time he served on the staff of the Wilmington General Hospital. He was also a member of the New Castle County Medical Society, Medical Society of Delaware, and the American Medical Association.

Dr. Buckmaster was a member of the State Selective Service Board, the Delaware State Rehabilitation Commission, and served as city vaccine commisioner for southeastern Wilmington. Fraternally he was affiliated with Eden Lodge No. 34, IOOF, and was a member and examining physician for the Wilmington Aerie, Fraternal Order of Eagles. He was also a member of the University of Pennsylvania Alumni Association.

A staunch Democrat, Dr. Buckmaster was active in the Democratic League of Delaware. He was an unsuccessful candidate several times for city offices. For 16 years, he was associated with the Wilmington Board of Education, and served as a member of the General Assembly in 1904. He was a member of Westminster Presbyterian Church.

He is survived by his second wife, Mrs. Helen O'Connell Buckmaster, and one sister, Mrs. W. Earl Lind of Wilmington.

Funeral services took place from the Hearn Funeral Home on September 9th, the Rev. Dr. A. H. Kleffman, pastor of West Presbyterian Church, officiating. Interment was private.

## BOOK REVIEWS

Campbell's Operative Orthopedics. 2nd edition in two vols., edited by J. S. Speed, M. D., and Hugh Smith, M. D. Pp. 1643 with 1143 illustrations. Cloth. Price $30.00. St. Louis: C. V. Mosby Company, 1949.

The second edition of the "Campbell's Operative Orthopedics" is now in two volumes. It differs from the first in that it is written mainly for the less experienced orthopedic surgeon. Thus, there is considerable new material relative to the indications for surgery and giving the reasons for such procedures.

Techniques which have been developed in the past ten years are included and there is a wider choice of operative procedures. There is data not only for the operation, but for the pre-and post-operative care. There are many new illustrations taken from the journals in which the operations were described by the originating surgeons, to whom credit is given.

Three new chapters have been added: Preperative and Postoperative Care, Amputations, and Peripheral Nerve Injuries. There have also been new additions to other chapters, namely, Rupture of Lumbar Discs, which has been added to the section on Miscellaneous Affection of Joints, and Mold Arthroplasty of the Hip, which has been added to the chapter on Arthroplasty.

The authors who contributed to this work are all members of the staff of the Campbell Clinic. The editors, Dr. Speed and Dr. Smith collaborated with Dr. Campbell in the preparation of the first edition. This new edition contributes extensively, as did the first, to the field of orthopedic surgery and offers a reference book to the younger and less experienced operator.

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A Manual of Cardiology. By Thomas J. Dry, M. B., M. S. in Medicine, Associate Professor of Medicine, University of Minnesota (Mayo Foundation); Consultant in Section on Cardiology, Mayo Clinic. Second edition. Pp. 355, with 97 illustrations. Cloth. Price, $5.00. Philadelphia: W. B. Saunders Company, 1950.

Your reviewer, a cardiologist, felt that this book, with very few exceptions, contains excellent material of high quality and high fidelity. It was his opinion, however, that the material, while too advanced for the general practitioner untrained in cardiology was too elementary for one with any training. To avoid a biased opinion, the book was loaned to a representative general practitioner, 20 years in practice, who stated that prior to finishing the first chapter the material was over his head and he felt that there should be much more in the way of explanation of basic fundamentals.

The book cannot be recommended for the general practitioner. It is doubtful if the specialist would find it of much use.

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The National Formulary. 9th edition, 1950. Pp. 918. Cloth. Price $8.00. Washington: American Pharmaceutical Association, 1950.

The new and completely revised NF, the ninth edition since 1888, is now available. It provides official specifications for many (over 159) widely used drugs not previously included in either the USP or the NF. It provides standards for 717 basic drugs and dosage formulas. The price includes all supplements which may be issued. The book is official from November 1, 1950. In addition, formulas and standards are continued in the new NF for many USP XIII not admitted to USP XIV. This book represents the culmination of four years of work by the Committee of National Formulary, the staff of the American Pharmaceutical Association Laboratory, and hundreds of collaborators. The book is required by law as part of the minimum equipment for pharmacists in most states.

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New and Nonofficial Remedies, 1950. Pp. 800. Cloth. Price, $3.00. Philadelphia: J. B. Lippincott Company, 1950.

Space does not permit a discussion of this volume; suffice it to say that it contains descriptions of the articles which stand accepted by the Council of Pharmacy and Chemistry of the AMA as of January 1, 1950, and is issued under the direction and supervision of said Council. This book should be on the desk of every pharmacist and every physician.

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Reports of the Council on Pharmacy and Chemistry of the A. M. A. Pp. 231. Cloth. Price ——. Philadelphia: J. B. Lippincott Company, 1949.

This is the latest reprint of the articles that have appeared in the *Journal of the A.M.A.*, together with some comments which were not published in the Journal. The volume supplements other Council publications, including New and Nonofficial Remedies, Useful Drugs, Epitome of the U.S.P. and N.F., etc. Like N.N.R., this volume is a must on the desk of every pharmacist and physician.

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Physicians' Desk Reference to Pharmaceutical Specialties and Biologicals. Pp. 312. Cloth. Gratis. Rutherford, N. J.: Medical Economics, Inc.

This is the 1950 edition of a volume that is becoming each year increasingly popular. It is divided into five sections, the first of which is an alphabetical list of pharmaceuticals, then comes a drug and pharmacological index, giving the manufacturers of each, then an index of therapeutic indications, then a professional products information section listing the manufacturer and his drugs indicates the dosage and packaging, and finally a section of general professional information which contains an unusual amount of miscellaneous information.

We have had occasion to refer to this volume so often that it occupies a prominent position on our desk.

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The Cytologic Diagnosis of Cancer. By the Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital, a gynecologic service affiliated with the Massachusetts General Hospital and the Department of Gynocology, Harvard Medical School. Published under the sponsorship of The American Cancer Society. Pp. 229, with 153 figures. Cloth. Price, $6.50. Philadelphia: W. B. Saunders Company, 1950.

We consider this one of the most, if not the most complete, and at least the most satisfying text on this subject that has been published. The descriptions are brief but pithy. The illustrations are beautiful. The book is dedicated to the originator of the Papanicolaou method and should be in the hands of all physicians, surgeons, gynecologists, pathologists and laboratory workers, who attempt to make the diagnosis of cancer in the female genital organs.

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Shearer's Manual of Human Dissection. Edited by Charles E. Tobin, Ph. D., Associate Professor of Anatomy, University of Rochester. 2nd edition. Pp. 286, with 79 illustrations. Cloth. Price, $4.50. Philadelphia: Blakiston Company, 1949.

This manuel is a guide for the medical student in his dissections, but is hardly complete enough to be used alone: some standard text book of anatomy must be used in conjunction with this book. The illustrations are not too numerous. The text is readable and the use of bold face type, indicating the more important structures, make reading distinctly easier. The index is adequate. We find the second edition, coming twelve years after the first, a definite improvement on the first edition.

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A Primer for Diabetic Patients—An Outline of Treatment for Diabetes with Diet and Insulin including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M. D., Professor and Chief of the Department of Medicine, Mayo Foundation, University of Minnesota; Senior Consultant, Division of Medicine, Mayo Clinic. 9th edition. Pp. 200, with 8 figures. Cloth. Price, $2.25. Philadelphia: W. B. Saunders Company, 1950.

The fact that Wilder's little manual has reached its ninth edition since the first one appeared in 1921, is proof that the book has intrinsic merits that bring on demands for repeated editions. The book describes the disease, its complications, and its treatment in terms that no person of ordinary intelligence can misunderstand. Unquestionably one of the best diabetic primers in print.

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A Century of Medicine in Jacksonville and Duval County. By Webster Merritt, M. D. Pp. 201, with 46 illustrations. Cloth. Price, $3.50. Gainesville, Florida: University of Florida Press, 1949.

Dr. Merritt is to be congratulated on the splendid history he presents of medicine in and around Jacksonville, Florida, since 1847. The book is extremely well documented and will be accepted as authoritative. An excellent little volume for the library of the man whose hobby is medical history.

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A Year With Osler. By Joseph H. Pratt, M. D., Physician-in-Chief, Joseph H. Pratt Diagnostic Hospital, Boston. Pp. 209, with six illustrations. Cloth. Price, $4.00. Baltimore: Johns Hopkins Press, 1949,

Dr. Pratt's book contains the notes he took from Osler's lectures in 1896-1897, while Pratt was a third year student at Johns Hopkins. Osler's delivery was for the most part slow and deliberate, and a facile writer could take down practically verbatim notes. Pratt's class of 1898 contained 22 members with 7 of them still living, but Knox is the only one still living in Baltimore. The book is a nostalgic recital of the good old days and shows that Osler's powers of observation were as great as those of Hippocrates. Another Osler characteristic brought to the fore was his phenomenal knowledge of medical literature, both classical and current. On page 33 "succussions" become "successions," and on page 35 "echolalia" becomes "echolalic," but such trivia will be overlooked by every reader.

The book will be of interest to all students of the formative period of modern medicine in America and with the life of Osler, who was one of its first transformers and still rates its greatest exponent.

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H. W. Smith, Harrington
Bruce Barnes, Seaford
H. S. Riggin, Seaford

#### CARE OF COLORED PEOPLE

S. G. Elbert, Jr., Wilmington
Conwell Banton, Wilmington
Sidney Stat, Wilmington
Catherine Gray, Bridgeville
H. G. Neese, Wyoming

#### NATIONAL EMERGENCY MEDICAL SERVICE

V. D. Washburn, Wilmington
J. R. Beck, Wilmington
C. L. Munson, Wilmington
W. F. Preston, Wilmington
S. H. Stradley, Wilmington

#### MEDICAL ECONOMICS

J. S. McDaniel, Jr., Dover
F. A. Bowdle, Wilmington
J. W. Lynch, Seaford

#### HOSPITALS AND PRACTICE OF MEDICINE

C. E. Wagner, Wilmington
G. A. Beatty, Wilmington
L. B. Flinn, Wilmington
J. W. Howard, Wilmington
W. O. LaMotte, Wilmington
J. S. McDaniel, Dover
J. B. Waples, Georgetown

#### GRIEVANCE BOARD

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G. W. K. Forrest, Wilmington
J. D. Niles, Middletown
I. J. Mac Collum, Wyoming
James Beebe, Lewes

#### SOCIAL HYGIENE

A. D. King, Wilmington
R. J. Comegys, Clayton
G. W. VanValkenburgh, Georgetown

### WOMAN'S AUXILIARY

MRS. DOUGLAS M. GAY, *President*, Wilmington
MRS. S. W. RENNIE, *President-elect*, Wilmington
MRS. E. T. O'DONNELL, *Corresponding Secretary*, Wilmington
MRS. ANDREW M. GEHRET, *Recording Secretary*, Wilmington
MRS. LAWRENCE W. FITCHETT, *Treasurer, Milford*

---

### NEW CASTLE COUNTY MEDICAL SOCIETY

*Meets Third Tuesday*

R. O. Y. WARREN, *President*
V. D. WASHBURN, *President-clect*
J. A. GILES, *Vice-President*
J. R. DURHAM, *Secretary*
C. M. BANCROFT, *Treasurer*

*Councilors* (1952): L. C. McGee, J. C. Pierson, H. T. McGuire.

*Delegates* (1950): C. W. Bancroft, N. L. Cannon, I. L. Chipman, J. A. Giles, A. L. Heck, J. W. Hooker, C. T. Lawrence, Charles Levy, C. L. Munson, M. B. Pennington, C. E. Wagner, S. H. Stradley.

*Alternates* (1950): J. W. Barnhart, W. W. Briggs, T. J. Bulger, C. R. Donoho, S. G. Elbert, Jr., F. A. Jones, W. O. LaMotte, Jr., W. H. Lee, J. W. Maroney, F. P. Rovitti, Alex Smith, H. P. Sortman.

*Delegates* (1951): E. M. Bohan, Ira Burns, A. D. King, E. G. Laird, W. O. LaMotte, Sr., C. E. Maroney, E. R. Mayerberg, E. S. Parvis, W. M. Pierson, O. N. Stern, M. A. Tarumianz, R. O. Y. Warren.

*Alternates* (1951): S. W. Bartoshesky, J. R. Beck, A. J. Fleming, Mildred Forman, D. J. King, A. G. Lessey, W. L. McLane, R. D. Sanders, P. A. Shaw, H. H. Stroud, H. A. Tarrant, R. B. Thomas.

### MEDICAL COUNCIL OF DELAWARE

Hon. Charles S. Richards, *President*; Joseph S. McDaniel, M. D., *Secretary*; Wallace M. Johnson.

### BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; Wm. Marshall, *Assistant Secretary*; W. E. Bird, J. E. Marvil, L. J. Jones.

### KENT COUNTY MEDICAL SOCIETY

*Meets First Wednesday*

H. V. P. WILSON, *President*, Dover.
W. C. PRITCHARD, *Vice-President*, Smyrna.
R. R. LAYTON, *Secretary-Treasurer*, Dover.

*Councilor*: William Marshall, Milford.

*Delegates*: I. J. MacCollum, Wyoming, and H. V. P. Wilson, Dover.

*Alternates*: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

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W. M. PIERSON, M.D. *First Vice-President*.
R. R. WIER, D.D.S., *Second Vice-President*.
A. M. GEHRET, M.D., *Secretary*.
I. M. FLINN, M.D., *Treasurer*.
E. C. SYROVATKA, LL.D., *Librarian*.

### DELAWARE PHARMACEUTICAL SOCIETY

WALTER A. SCHUELER, *President*, Wilmington.
HARRY C. HELM, *First Vice-President*, Dover.
EARL HASTINGS, *Second Vice-President*, Selbyville.
WALTER E. BROWN, *Third Vice-President*, Holly Oak.
J. WALLACE WATSON, *Secretary*, Edge Moor.
ALBERT DOUGHERTY, *Treasurer*, Wilmington.

### SUSSEX COUNTY MEDICAL SOCIETY

*Meets Second Thursday*

J. E. MARVIL, *President*, Laurel.
L. L. FITCHETT, *Vice-President*, Milford.
T. J. TOBIN, *Secretary-Treasurer*, Milton.

*Councilors*: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

*Delegates*: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

*Alternates*: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

### DELAWARE STATE DENTAL SOCIETY

CLYDE COX, *President*, Newark.
JOSEPH MACK, *1st V. P.*, Seaford.
J. F. MAGUIRE, *2nd V. P.*, Wilmington.
LEWIS KRESHTOOL, *Secretary*, Wilmington.
HARRY KURFIRST, *Treasurer*, Wilmington.
P. E. MUSSELMAN, *Delegate A.D.A.*, Newark.
CLYDE NELSON, *Alternate A.D.A.*, Milford.

### DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford; Bruce Barnes, M. D., Seaford; Mrs. C. M. Dillon, Wilmington; Mrs. A. Louise Cochran, Middletown, R1; Howard N. Stayton, M. D., Wilmington; Mrs. N. W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

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**Official Organ of the Medical Society of Delaware**

INCORPORATED 1789

VOLUME 22
NUMBER 12

DECEMBER, 1950

Per Copy 50c
Per Year, $4.00

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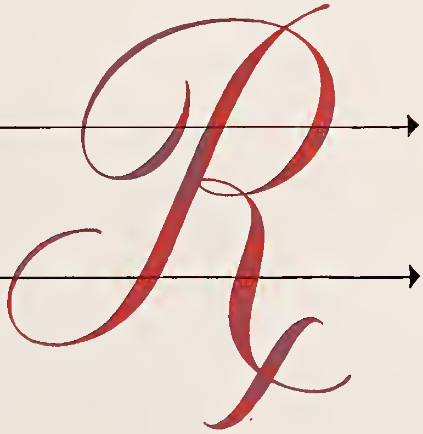
Entered as second-class matter June 28, 1929, at the Post Office at Wilmington, Delaware, under the Act of March 3, 1879. Editorial Office, 822 North American Building, Wilmington, 7, Delaware. Business Office, Farnhurst, Delaware. Issued monthly. Copyright, 1950, by the Medical Society of Delaware.



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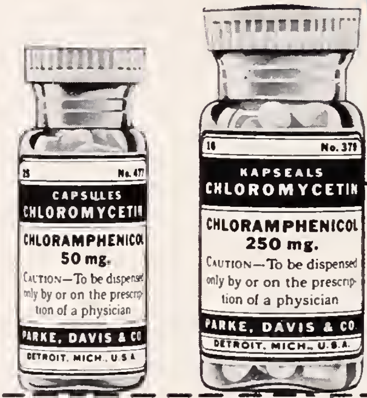

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# DELAWARE STATE MEDICAL JOURNAL

*Issued Monthly Under the Supervision of the Publication Committee*
*Owned and Published by the Medical Society of Delaware*

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## PROCEEDINGS
## MEDICAL SOCIETY OF DELAWARE
### OCTOBER 3-4, 1950

The 161st Annual Session of the Medical Society of Delaware, meeting in the People's Church Community Hall, Dover, Delaware, was called to order at 10:15 A. M. by Dr. L. L. Fitchett, President, of Milford.

The invocation was delivered by Rev. William F. Edge, Pastor of the People's Congregational Church, Dover.

President Fitchett: We are honored this morning in having with us the Mayor of Dover, who will give us the official welcome to the city, Honorable William J. Story.

Honorable William J. Story: Dr. Fitchett and Members of the 161st Annual Session of the Medical Society of Delaware:

It is indeed a privilege to welcome the 161st session of the Medical Society of our State.

I am happy to be here with you this morning but, at the same time, my happiness is mixed with sadness. I am sad because one of my favorite boyhood and school pals, and one of our best and most respected citizens, has recently passed on. The last conversation I ever had with Carl Scull was when he called and in his fashion told me how hard a time he had had getting in touch with me, and then asked me to bring this session of your Society a word of greeting this morning. Again in his fashion, he told me to get my pad and pencil and make a note of it because he didn't intend to remind me of it any more.

I pay tribute to him this morning as a fine friend, a good physician and a generous public-spirited citizen who has been taken from us all too soon.

I have read over your program for the session and it seems to me that you have planned plenty of real work for yourselves — all ultimately intended for the benefit of humanity — for it is humanity that you are serving. And what real progress your profession has made in the last few decades under the stimulus of the need for progress in medicine and through your interest in extending the life span of our people, and your interest in the saving of lives. Progress through the dictates and the urges of your own minds and hearts. Progress because of your loyalty to, and your love for, your profession. Progress and service to your fellow man, generous service many times unpaid for. If let alone, I feel confident that the members of the medical profession will discharge successfully every reasonable responsibility belonging to them. Yet there are those in high official places who, through the power of the Federal Government, want to control your profession from Washington; in short, to socialize medicine; who want to play politics with the medical needs and the lives of the people of our country. I personally am unalterably opposed to socialized medicine and I cannot find adequate words to commend the medical profession on its stand against the nefarious scheme for socialization. I am opposed to it just as I am opposed to other present-day governmental schemes that are contrary to the concepts of the founding fathers and the basic principles of our form of government. The greatness of our nation has been deteriorated in recent years by political chicanery and by the enactment of laws that encourage selfish interests of mass organizations. The act of greatness, in which honor and achievement were prime, has become an empty mockery and too often sinister pressure groups win the influence and decisions of the highest authorities in the land. It is my hope that truth, integrity and statesmanship will again manifest themselves before it is too late, in order that we may enjoy the practices and principles in government which prevailed in earlier days.

On the matter of centralization in Washington, I should like to read you a few excerpts from opinions expressed by two or three of our nation's statesmen of years gone by which I believe should be read and respected by our officials in Washington:

"When all government, domestic and foreign, in little as in great things, shall be drawn to Washington as the center of all powers, it will render powerless the checks provided of one government on another and will become as venal and oppressive as the government from which it separated. If the states look with apathy on this silent descent of their governments into the gulf which is to swallow all, we have only to weep over the human character found uncontrollable but by a rod of iron, and the blasphemers of man as incapable of self-government, become his true historians." These are the words of Jefferson. The late President Wilson expressed his views on the subject in the following language:

"It would be fatal to our political vitality really to strip the states of their powers and transfer them to the Federal Government. It cannot be too often repeated that it has been the privilege of separate development secured to the several regions of the country by the constitution and not the privilege of separate development only but also that other more fundamental privilege that lies back of it, the privilege of independent local opinion and individual conviction which has given speed, facility, vigor and certainty to the processes of our economic and political growth. To buy temporary ease and convenience for the performance of a few great tasks of the hour at the expense of that would be to pay too great a price and to cheat all generations for the sake of one."

In his Farewell Address, Washington, with words which apply with great force today, said:

"If, in the opinion of the people the distribution or modification of the constitutional powers be in any particular wrong, let it be corrected by an amendment in the way which the Constitution designates. But let there be no change by usurpation for though this in one instance may be the instrument of good it is the customary weapon by which free governments are destroyed."

On this subject of our personal liberties I should like to quote for you the closing words of Webster's eulogy on George Washington in 1832:

"Other misfortunes may be borne, or their effects overcome. If disastrous wars sweep our commerce from the ocean, another generation may renew it; if it exhaust our Treasury, future industry may replenish it: If it desolate and lay waste our fields, still, under a new cultivation, they will grow green again and ripen to future harvests.

"It were but a trifle even if the walls of yonder capitol were to crumble, if its lofty pillars should fall, and its gorgeous decorations be all covered by the dust of the valley. All these may be rebuilt.

"But who shall reconstruct the fabric of demolished government? Who shall rear again the well-proportioned columns of constitutional liberty? Who shall frame together the skillful architecture which unites national sovereignty with state rights, individual security, and public prosperity?

"No, if these columns fall, they will be raised not again. Like the Colosseum and the Parthenon, they will be destined to a mournful and melancholy immortality. Bitterer tears, however, will flow over them than were ever shed over the monuments of Roman or Grecian art; for they will be the monuments of a more glorious edifice than Greece or Rome ever saw, the edifice of Constitutional American Liberty."

You of the medical profession have already accepted the challenge. This morning I have merely tried to emphasize it.

In conclusion, may I extend a cordial greeting and a warm welcome to each one here, and wish for your Society and for your profession greater success in the future, unhampered and unfettered by any outside agency of any kind or character, and may I also wish for you, and I feel sure you will have, a most interesting and successful session of your Society.

President Fitchett: Thank you, Mayor Story. The next item of business will be the report of the House of Delegates, by Dr. Gehret, Secretary.

(See Transactions, this issue).

The scientific program then proceeded as follows:

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## Tuesday Morning, October 3, 1950

Dr. John F. Hynes, Wilmington: Combined Radical Resection of Hypopharynx, Larynx and Cervical Nodes, With Esophagosplasty.

Discussion: Drs. W. M. Pierson, Wilmington, and H. S. Rafal, Wilmington.

Dr. David A. Cooper, Philadelphia: Antibiotic Therapy.

Discussion: Drs. L. D. Phillips, Marshallton, and G. A. Beatty, Wilmington.

---

## Tuesday Afternoon, October 3, 1950

Dr. Joseph Hughes, Philadelphia: The Treatment of Anxiety States.

Discussion: Drs. A. L. Ingram, Jr., Wilmington, and M. A. Tarumianz, Wilmington.

Dr. William D. Stroud, Philadelphia: Coronary Artery Disease.

Discussion: Drs. E. R. Miller, Wilmington, and J. R. Durham, Wilmington.

Dr. Joseph B. Vander Veer, Philadelphia: Anticoagulant Therapy in Acute Myocardid Infarction, Venous Thrombosis and Pulmonary Embolism.

Discussion: Drs. R. A. Mino, Wilmington, and A. H. Clagett, Jr., Wilmington.

Dr. Joseph C. Yaskin, Philadelphia: Neuropsychiatric Emergencies.

Discussion: Drs. M. A. Tarumianz, Farnhurst, and G. J. Boines, Wilmington.

---

## Wednesday Morning, October 4, 1950

Dr. Alfred W. Pennington, Wilmington: The Use of Fat in a Weight-Reducing Diet.

Discussion: Drs. J. R. Durham, Wilmington, and L. B. Flinn, Wilmington.

Dr. L. Kraeer Ferguson, Philadelphia: The Surgical Treatment of Ulcerative Colitis.

Discussion: Drs. O. A. James, Milford; L. J. Jones, Wilmington; L. C. McGee, Wilmington; L. B. Flinn, Wilmington, and H. S. Rafal, Wilmington.

Dr. L. L. Fitchett, Milford; Post-Graduate Training of the General Practitioner.

President Fitchett: I believe Dr. MacCollum has an announcement.

Dr. MacCollum: I believe it is perfectly fitting at this time that I should introduce this Resolution:

It was a profound shock to the community and to the Medical Profession when we learned of the sudden and untimely death of Dr. Carl B. Scull on 25th July 1950 at his home in Dover, Delaware, and it is with much sorrow and sincere regret that we now record his passing in the annals of this Society.

Dr. Scull was actively engaged in the practice of medicine in Dover. Dr. Scull had always taken a keen interest in the medical profession, having served as President of the Staff of the Kent General Hospital, President of the Kent County Medical Society, and he was President of the Medical Society of Delaware at the time of his death. He served in the Medical Corp of the United States Army in World War II from 1942 to 1946.

Dr. Scull was recognized not only as a leader of the Medical Profession but also in the social and business life of the community. Dr. Scull had a rare sense of propriety, and his demeanor was always that of a perfect gentleman. He was considerate, understanding and sympathetic toward others; he had a keen sense of humor. These attributes, plus an inherent personal charm, made him that dynamic and forceful personality that he was, NOW

WHEREAS, the deceased served his community as physician all his life except for the time he served in the armed forces of Our Country in World War II,

WHEREAS, he did serve the State and Nation with honor and distinction to the medical profession,

BE IT RESOLVED, that We, the Medical Profession, are bereaved at the sudden and untimely passing of our friend and colleague,

BE IT ALSO RESOLVED, that We, the Members of the Medical Society of Delaware express our sympathy to the family of the late Dr. Carl B. Scull, and

BE IT FURTHER RESOLVED, that this Resolution be spread upon the minutes of this Society and a copy sent to the family of the deceased.

Mr. President, I move the adoption of the Resolution.

The motion was seconded and carried, and the resolution was adopted.

President Fitchett: The next item of business is the election of the President-elect, from Sussex County. I will entertain a motion.

Dr. Riggin: I want to submit the name of a doctor from Sussex whom you all know and who has been practicing in the state for 21 years. He contributes a great deal to the County Medical

Society and also to the State Society. He is a very successful man in all his work and a very clever surgeon. I don't think any more needs to be said about him.

I take pleasure in submitting the name of Dr. E. L. Stambaugh, of Lewes, as President-elect.

Dr. Barnes: I would like to second the nomination of Dr. Stambaugh.

Motion made and seconded that nominations be closed. Motion made and seconded that the Secretary cast the ballot. Motion carried.

President Fitchett: Dr. Smoot and Dr. James, will you escort Dr. Stambaugh to the platform?

President-elect Stambaugh: I am almost at a loss for words, but I appreciate deeply this honor.

Mr. President, I was taught that a smart politician reserves some of his speeches. I just have a thought or two in line with the meeting of the House of Delegates the other night. I feel too that we need a stronger organization between members, committees, and officers, particularly if we are going to foil the government's illusion that there is one side to every question — its side. My suggestion would be that, at least while we are being wedged between political medicine and our patient, we remember our responsibility in the words of a teacher of mine, Hobart Amory Hare:

"To cure sometimes, to relieve often, to comfort always."

That way our organization can be a bit stronger. Again I thank you for this signal honor.

President Fitchett: I have an announcement from the Farmers Bank: "We welcome you. At your place at luncheon is a flower for your buttonhole. . . . . . ."

The only other announcement I have is that luncheon will be at 12:30 and we will be guests of the Kent County Society. We will adjourn now until 2 P. M.

## Wednesday Afternoon, October 4, 1950

Dr. Rufus S. Reeves, Philadelphia: Tuberculosis in Small Communities.

Discussion: Drs. F. I. Hudson, Rehoboth, and V. D. Washburn, Wilmington.

Dr. William G. Leaman, Jr., Philadelphia: Rehabilitation Following Acute Myocardial Infarction.

Discussion: Drs. C. J. Prickett, Smyrna, and A. H. Clagett, Jr., Wilmington.

Dr. Edward L. Bortz, Philadelphia: The Biology of Aging.

Discussion: Dr. L. C. McGee, Wilmington, and L. B. Flinn, Wilmington.

Dr. Alvin W. Howland, Philadelphia: Present Concept of Glaucoma.

Discussion: Drs. J. E. Marvil, Laurel, and W. O. LaMotte, Jr., Wilmington.

President Fitchett: On behalf of the Society, I would like to thank all of our speakers and their discussors, the exhibitors, the Kent County Medical Society, the Committee on Arrangements, and the Women's Auxiliary who helped them, the Reverend William Edge and his staff, who assisted with the exhibits and served the meals and made available this fine structure to us.

I would like to have a motion from the floor that this expression of thanks be made a matter of record so we can notify them.

Motion made, seconded and carried.

President Fitchett: Are there any further announcements?

Dr. Wagner: Mr. President, I simply wish to made the remark that we are all very much shocked to learn of the death of Dr. Scull, and I would like to state that Dr. Fitchett was very reluctant to fill the position of President that was made vacant by the sudden death of Dr. Scull, and I wish to compliment him upon the very able manner in which he has presided over this session. I know you will agree with me in saying that he has done it very ably and very graciously. I know that we are all very grateful to him.

I wish to second what he has said about the fine manner in which we have been entertained here by the members of the Kent County portion of our Society. We certainly did have a wonderful evening last evening, and the spirit of good fellowship which prevailed I think means a great deal to us in the meeting of wives and members of our Society, in getting together socially that way.

It was a very great pleasure for us to come down here to Dover, and we want again to thank the members of the Society of Kent County for entertaining us so well.

I again compliment you on the very fine manner in which you presided over this session, Dr. Fitchett.

President Fitchett: If there are no further announcements, the convention is adjourned.

Whereupon, at 5:10 P. M. the convention was adjourned.

## TRANSACTIONS: HOUSE OF DELEGATES

### October 2, 1950

The meeting of the House of Delegates of the Medical Society of Delaware was called to order at 9:30 P. M. on Monday, October 2, 1950, in the People's Church Community Hall, Dover, Delaware.

President Fitchett: The first item of business will be the roll call.

The following members of the House were present: L. L. Fitchett, President; A. M. Gehret, Secretary; J. M. Messick, Treasurer; William Marshall, Jr., Councilor; J. W. Lynch, Councilor; A. C. Smoot, Councilor; I. J. MacCollum, Councilor.

*Delegates Present*

New Castle County: N. L. Cannon, I. L. Chipman, C. T. Lawrence, Charles Levy, C. L. Munson, M. B. Pennington, S. H. Stradley, A. D. King, W. O. LaMotte, Sr., E. R. Mayerberg, E. S. Parvis, O. N. Stern, M. A. Tarumianz, R. O. Y. Warren.

Kent County: H. V. P. Wilson.

Sussex County: Bruce Barnes, G. M. VanValkenburgh.

*Alternates Present:*

New Castle County: J. W. Barnhart, Alex Smith, R. D. Sanders.

Kent County: J. S. McDaniel, Sr., H. W. Smith.

President Fitchett: The next order of business is the minutes of the last session.

Motion made, seconded and carried that the reading of the minutes of the last session, having been published in The Journal, be dispensed with.

President Fitchett: The next order of business is the reports of officers.

**Report of the President**

The untimely and tragic death of President Carl Scull, Jr., on July 25, 1950, brought his duties to me as Vice-President.

Fortunately for me and for the Society the groundwork had been laid by Dr. Scull, by the Executive Secretary Dr. Bird, by the Secretary Dr. Gehret, and by the convention committee of Kent County so that the preparations for the convention proceeded smoothly.

This same watchful pair, Dr. Bird and Dr. Gehret, have so performed their duties that the work of the Society has gone on efficiently and without interruption.

Perhaps the biggest task confronting the Society in the next few months is the adequate planning for medical care in the civilian defense program in the event of a sudden catastrophe in this or adjacent areas. This planning must be completed within the near future.

Respectfully submitted,
LAWRENCE L. FITCHETT, *President*

Motion made, seconded and carried that the report of the President be accepted.

PRESIDENT FITCHETT: We will next have the report of the Secretary.

DR. GEHRET: Mr. President, I have no report excepting that late in the summer I communicated either by letter or by telephone with the various councils asking them for recommendations for a committee requested by AMA headquarters to nominate three individuals who would serve in procuring medical officers for the Armed Forces. The recommendations which were received were forwarded to Dr. Fitchett, the President, and he appointed Dr. Shands as chairman of the committee, Dr. Washburn and Dr. Layton.

Motion made, seconded and carried that the report of the Secretary be received.

PRESIDENT FITCHETT: We will next have the report of the Treasurer.

### Report of the Treasurer

January 1, 1950 to September 5, 1950

| | | | |
|---|---|---|---|
| Balance in checking account January 1, 1950 | | $ 5,833.51 | |
| Plus excess for uncancelled check | | 675.00 | $ 6,508.51 |
| *Receipts* | | | |
| New Castle County | | | |
| Dues | | 10,575.00 | |
| Assessments (AMA) | | | |
| Kent County | | | |
| Dues | | 1,150.00 | |
| Assessments (AMA) | | | |
| Sussex County | | | |
| Dues | | 1,875.00 | |
| Assessments (AMA) | | | |
| Dividends from Farmers Bank | | 105.00 | |
| Salary of the Editor | | 1,012.00 | |
| Exhibits | | 755.00 | |
| AMA collection expense | | 14.63 | |
| Refund from Du Pont Company | | 134.72 | 15,621.35 |
| | | | $22,129.86 |
| *Disbursements* | | | |
| Salaries | | | |
| 1. Executive Secretary and Editor | | $ 2,474.90 | |
| Social Security & Withholding Tax | | 375.60 | |
| Delaware State Tax | | 21.90 | |
| 2. Stenographer (part time) | | 280.00 | |
| Office | | | |
| 1. Printing, stationery & postage | | 333.87 | |
| 2. Badges | | 32.67 | |
| 3. Magazines | | 15.50 | |
| 4. Telephone & telegraph | | 7.03 | |
| 5. Miscellaneous | | | |
| Welfare Council of Del. | $ 1.00 | | |
| Bond for Officers | 23.97 | | |
| A.M.A. Directory | 20.00 | | |
| Flowers | 25.00 | | |
| Ret. of ½ Dr. Worden's dues | 12.50 | 82.47 | |
| Travel | | | |
| 1. Delegate to A.M.A. (2 sessions) and Conferences | | 340.00 | |
| Operation | | | |
| 1. Subs. to Journal 278 at $2 | | 556.00 | |
| 2. Assessments to A.M.A. | | 7,275.00 | |
| 3. Annual session—Du Pont Co. (for 1949) | | 134.72 | |
| Publicity | | 187.50 | |
| Auditor (for 1949 books) | | 170.00 | 12,287.16 |
| Balance in checking account September 5, 1950 | | | 9,842.70 |
| 3 $1000.00 Series F War Bonds (May 1943) | | | 2,466.00 |
| 7 Shares Farmers Bank of Delaware | | | 2,800.00 |
| Defense Fund | | | |
| Balance—September 5, 1950 | | 3,867.79 | |
| Interest—September 5, 1950 | | 96.68 | 3,964.47 |
| Total Assets, September 5, 1950 | | | $19,073.17 |

Respectfully submitted,
JOS. M. MESSICK, *Treasurer*

Motion made, seconded and carried that the report of the Treasurer be accepted.

PRESIDENT FITCHETT: We will now have the report of the Executive Secretary.

### Report of the Executive Secretary

Your Executive Secretary reports that the volume of work for the year just passed shows a material increase. The number of mailings this year has been about 2,400, as compared with 1,700 the previous year. The correspondence is on a current basis.

We made an official visit to the Sussex Society in February, and to the Kent County Society in March. Both of these meetings were very enjoyable and we hope we imparted some information of value. We have attended numerous committee meetings and conferences in this state.

In addition, we attended the AMA Conference of Secretaries and Editors in Chicago, followed by the AMA Conference in Public Relations in November; the National Federation of State Boards (of which we happen to be the Vice-President for the year 1950) in Chicago in February; a Special AMA Conference on the National Education Campaign in Chicago in February; and the Middle Atlantic States Regional Conferences of the AMA Council on Medical Service, in Philadelphia in November and May. These meetings are most instructive and we profited by our attendance.

In connection with the Annual Session of the AMA at San Francisco last June, I am sure that Dr. Wagner will be too modest to tell you, but the Speaker appointed him a member of the important Committee on Rules and Order of Business. The registration from Delaware at this meeting totaled seven physicians, a very creditable showing, considering the size of our Society and the distance to be traveled.

The membership of the Society is as follows:

| | | |
|---|---|---|
| October, 1949 | | 291 |
| Additions: | | |
| New Members | 15 | |
| Reinstated | 11 | 26 |
| | | 317 |
| Losses | | |
| Deaths | 3 | |
| Transfers out | 10 | 13 |
| October, 1950 | | 304 |

The State Board this year has licensed 30 new physicians, most of whom will probably remain in this state and become members next year.

The AMA now permits the State Society to retain 1% of the AMA dues collected as the cost of collection. Therefore, please channel *all* membership data and *all* AMA dues, together with state data and dues via the state officers, i. e., original copy to the Treasurer, Dr. Messick, a carbon copy to the Executive Secretary, and of course, a carbon copy for the County Society files. This is the repeated request of the AMA.

Our exhibits this year are slightly smaller in number than in 1949, but are slightly larger than in 1948. However, since our rental is considerably lower this year, we anticipate the largest profit yet made by your Society from exhibits. The registration at Rehoboth in 1948 totaled 174, and at Wilmington in 1949 it totaled 325. We hope the registration at Dover this year will be almost as large as last year. Since the exhibits contribute a substantial sum towards meeting the expenses of our annual convention, and since exhibitors will come only if we can show the home office that their display was visited by our members, it is of the utmost importance that *every* member of this Society, and *every* member of the Auxiliary, who attend this convention at all should visit *every* booth and sign a card at *every* booth.

We have assisted in preparing a program for this Session which we hope you will like. There is a little extra stress on cardiovascular diseases, but the experience in Kent County within this past year readily explains their interest in this and related subjects.

This is the first year we have been able to hold all the meetings of the Society and of the Auxiliary under one roof.

Experience in the past has taught us that our Annual Session, when held in October, should be either the first or fourth week. We shall have to await publication of the 1951 convention dates of other state societies and certain national societies before deciding just when this Society should meet next year.

In conclusion, we wish to thank all the officers and members of the Society and of the Auxiliary with whom we have had official business during the year. Their cooperation has been splendid and we gratefully acknowledge it.

Respectfully submitted,
W. Edwin Bird, *Executive Secretary*

Motion made, seconded and carried that the report of the Executive Secretary be received.

President Fitchett: Now we will proceed to the reports of the Standing Committees. The first one is the Committee on Scientific Work.

There is no report from that committee on hand, and Dr. Everett and Dr. James are not here.

We will proceed to the Committee on Publication.

### Report of the Committee on Publication

As heretofore, we transmit the report of the Committee in two parts: (1) that of the Editor; and (2) that of the Managing Editor.

### Report of the Editor

We are nearing the end of Volume 22 of the New Series. The amount of material published is about equal to that of Volume 20, which was the largest in the history of The Journal. Through the excellent cooperation of the hospitals and of other contributors, together with the papers from our Annual Session we generally have a small surplus of material on hand — a healthy condition which we hope will continue. The scientific value of the material contributed by our own profession in Delaware is definitely improving — another healthy condition which we hope will continue.

Our printers, The Star Publishing Company, again deserve a most kind word for their continued courtesies and efficiency, and to their entire staff must go again our thanks.

To all our officers and members, whose continued cooperation sustains us, we offer our grateful thanks once more.

Respectfully submitted,
W. Edwin Bird, *Editor*

Report of the Managing Editor

Dr. Tarumianz: Mr. President and Members; I have very little to report, except that we are going to start to dig into our savings, and that is not a good sign. For the past twenty years or more, membership dues have allowed us to pay only $2 for subscription to The Journal. It is obvious that if we are to remain in black ink, we cannot continue with $2.

For the first time in our history, we had only a $200 surplus last year, which is quite unusual for The Journal. Usually it has amounted to $800 or $900. It is my opinion that next year we won't have any surplus at all but we will have to dig into our savings.

It is true that we have some $9,000 or $10,000 of savings, but it is entirely up to the House of Delegates to decide whether we should actually go into our savings and spend money from there or whether we should increase the subscription fee from $2 to $3, which would be fair and would not hurt anybody. That would give us an additional $300 and would keep us in the black.

### Report of the Managing Editor

August 1, 1949 to August 1, 1950

A. Checking Account

| | | |
|---|---|---|
| Checking Account, Wilmington Trust Co., August 1, 1949 | | $2,893.82 |
| *Receipts* | | |
| Advertisements | $7,331.61 | |
| Bonus on ads AMA | 472.40 | |
| Subscriptions | | |
| Med. Soc. Members, Present Year | 556.00 | |
| Others | 112.00 | |
| Single Copy Sales | 21.50 | |
| Halftones | 102.02 | |
| Interest on War Bonds (These bonds in the amount of $3,502.38 were purchased Dec. 10, 1942) | 87.50 | |
| Total Receipts | $8,683.03 | |
| *Disbursements* | | |
| Printing and Mailing Journal | $5,238.70 | |
| Printing Supplement and Roster | 297.00 | |
| Editor's Salary | 1,922.23 | |
| Social Security & Withholding Tax, Editor's Sal. | 259.50 | |
| State Tax | 15.42 | |
| Bonding Stenographer & Managing Editor | 32.50 | |
| Stenographer | 430.00 | |
| Notary Fees | 1.50 | |
| Postage | 2.69 | |
| Stationery and Supplies | 155.27 | |
| Copyrighting Journal | 48.00 | |
| Travel Expenses | 16.73 | |
| Bound Volumes | 28.50 | |
| Total Disbursements | $8,448.04 | |

| | | |
|---|---|---|
| Surplus | | $ 234.99 |
| Balance in Checking Account, August 1, 1950 | | 3,128.81 |
| B. Savings Account | | |
| Savings Account, Wilmington Trust Co., August 1, 1949 | | 1,604.27 |
| Interest on Savings Account | $15.00 | |
| Balance in Savings Account, Wilmington Trust Co., August 1, 1950 | | 1,619.27 |
| Savings Account, Wilmington Savings Fund Society, August 1, 1949 | | 2,000.00 |
| Interest on Savings Account (12/31/49) | $12.50 | |
| Balance Savings Account, Wilmington Savings Fund Society, August 1, 1950 | | 2,012.50 |
| Balance in Savings Accounts, August 1, 1950 | | 3,631.77 |
| C. War Bonds | | |
| U. S. War Bonds, Purchased December 10, 1942 | | $3,502.38 |
| U. S. War Bonds, Balance, August 1, 1950 | | 3,502.38 |
| Summary | | |
| B. Savings Accounts Balance, August 1, 1950 | | $3,631.77 |
| A. Checking Account Balance, August 1, 1950 | | 3,128.81 |
| C. U. S. War Bonds | | 3,502.38 |
| Grand Total (Accounts A, B, and C) | | $10,262.96 |

Respectfully submitted,
M. A. Tarumianz, *Managing Editor*

Upon motion duly made, seconded and carried, the report of the Editor and the Managing Editor was accepted.

President Fitchett: Was there a suggestion in there, Dr. Tarumianz, that we increase the subscription to $3? Do you wish to make that in the form of a motion?

Dr. Tarumianz: I have recommended to the Budget Committee to incorporate $900 instead of $600 for suscriptions next year. That is up to the Budget Committee to present to the House of Delegates, and it is entirely up to the House of Delegates to decide.

I would like to say this much, that as long as I am Managing Editor I wouldn't like to run The Journal on the basis of a deficit. I think it is good business to keep it in the black and I think we can do it. I don't see any reason why we shouldn't consider a fair subscription fee.

President Fitchett: We will take that matter up when we consider the budget.

We will now call for the report of the Committee on Public Laws. Do you have a report for that committee, Dr. McDaniel?

### Report of the Committee on Public Laws

Dr. McDaniel: The Committee on Public Laws has no report to make owing to the fact that there was no legislature this year. You will probably hear a whole lot from us next year.

President Fitchett: Next is the Committee on Medical Education.

Dr. Gehret: Mr. President, in the absence of Dr. L. B. Flinn, I want to read this letter.

### Report of the Committee on Medical Education

September 30, 1950

Dear Doctor Bird

I learned for the first time today that I am Chairman of the Committee on Medical Education of the State Society. Someone may have told me or informed me of this previously; if so, it made no impression.

The Committee has nothing to report therefore, since we have not met and have done nothing for the past year. There has been a lot of activity however in medical education throughout the state in the past year in which various members of the Society have taken a very active part, but there has been no concerted or planned action, as far as I know, on the part of the Society.

Sincerely yours,
Lewis B. Flinn, *Chairman*

Motion made, seconded and carried that the report be accepted.

President Fitchett: We will now have the report of the Committee on Budget.

### Report of the Committee on Budget

Dr. Messick: (Reading Report of Receipts and Disbursements.) After considerable adjustment and readjustment and paring, we finally got the budget down to that figure of $9,375. The Budget Committee, after discussing that part of the state dues that goes to the State Journal, recommends that the fee for the Journal be increased from $2 to $3, so we have placed the Journal subscription at $3, $825, since we didn't actually figure on 300 members.

President Fitchett: Upon hearing the estimated income and estimated expenses, how close do they come?

Dr. Gehret: They are equal. Actually when we made the budget for the year, the best we could come to was $1000 over our expected income, and we had to go over the budget and pare it down $1000 until we got down to our expected income.

Dr. Mayerberg: Mr. Chairman, I don't believe I missed any of Dr. Messick's report. I failed to hear anything about an allowance for the function of the Committee on Medical Service and Public Relations. I heard nothing about the Grievance Board and about the Public Laws Committee. They are three important committees of this organization that should have funds at their disposal. Your Public Relations Committee functions with very little. We employed for a short time a public relations agent and had to dispense with her services because we couldn't afford it, and the amount of work didn't justify employing such a person. But your Grievance Board is going to need money. They have to have stationery and they have to have a secretary. They have got to have money in order to function.

We are coming up to a legislative year, in January, and your Public Laws Committee is going to need some money. We have never had more than $200 or $300 allocated to the Public Laws Committee, and a lot of times we need more than that.

These organizations that are pressing American medicine and Delaware medicine have thousands of dollars at their disposal every year when they come down to the Legislature, and we haven't got any.

We've got to cut down a lot of this fancy party stuff, and if necessary eat sandwiches and drink cokes and save the money we have for necessary purposes.

Dr. Messick: Dr. Mayerberg is quite right. None of those items are included. I will say that in 1950 we did spend, in the first few months of this year, $187.50 for publicity for a person in Wilmington, but her services were dispensed with. Nothing however is included in this budget for publicity or for the Public Laws Committee or any of the similar committees.

Dr. Bird: You have $200 there, Doctor, under Operation, (C), Officers and Committees.

Dr. Gehret: Yes, but that is all the money we have in our proposed budget. After the Budget Committee made up the budget it came out to $1000 more than our anticipated income, so we went over it and deducted $1000, a little bit from several items—$200, for instance, from the dinner. However, there is nothing in this budget for the committees that Dr. Mayerberg mentioned.

President Fitchett: I think Dr. Mayerberg has brought up some very important matters in regard to the disposal of some of our money. What is the pleasure of the House on this report? Will it be accepted or shall we turn it back to the committee for further action?

Dr. Tarumianz: Having been chairman two years ago of this committee, I would like to say to Dr. Mayerberg that if we were sure of how much we were going to spend, the Budget Committee would be only too glad in the next few minutes to hold a meeting and discuss the matter and incorporate it in our proposal.

However, if you recollect two years ago, we didn't spend much. We got the service free of charge. Are you going to be able to obtain services free of charge this coming season, or not? That is something that we would like to know. If you think we could obtain the services for less money, or no money, I think we could incorporate it in the budget and submit it to the House in possibly half an hour.

Personally, I think we will need about $500 for all three purposes. At least we could have that amount allocated, and in case you don't spend it, certainly it would stay in the treasury. We are not losing anything by allocating money. At least that authorizes the chairmen of the committees to utilize the available money for the purposes for which it is allocated.

Is that agreeable?

Dr. MacCollum: As I understand, the money is already allocated, is it not?

Dr. Tarumianz: No. There are such things as miscellaneous. It is obvious that we could take the miscellaneous and put it in one lump sum for publicity or any other purpose that the House of Delegates wishes us to.

Dr. Mayerberg: I don't mean to criticize anybody, but it is amazing to me that the Budget Committee met and set up this budget without consulting the chairman of these valuable committees.

President Fitchett: Would $500 cover your needs?

Dr. Mayerberg: You are talking now of the Public Laws Committee, Dr. McDaniel's committee? He may not need any. Last session we were pretty fortunate in the Senate, and not too bad in the House. We don't know what is going to happen this year, and we certainly ought to have funds available in case he needs them, and they should be used at his discretion.

President Fitchett: I think this is something that ought to be thrashed out in committee rather than on the House floor. So how about the Budget Committee and the chairmen of the three committees going outside for a few minutes and seeing if there is anything that can be incorporated in the budget?

Dr. Tarumianz: Mr. President, I just hate to be called down for having failed to do our duty. It is a well known fact that the chairmen of the committees, if they feel they are in need of any funds, should approach the Budget Committee with their requests. You can't blame us altogether. We have just taken the things that have been used last year, and gone over those, spent a few hours thinking what else there might be.

Naturally, Dr. Mayerberg thinks probably that we should not have a fancy banquet, and all that. I agree with him. Nevertheless I think the dignity of the profession demands that we don't go to an annual meeting with sandwiches. There are two sides to the story. My good friend would be the first one to oppose and revolt against sandwiches in the banquet. So I don't think it is fair.

We would like to do our job but we don't like to be criticized. We are not the only ones who are at fault. I think the committee members should have approached the Budget Committee and asked them. Actually, we thought that Dr. McDaniel would assume the responsibility and take care of the legal matters here without any cost, because he did it two years ago. We talked about that. But if Dr. McDaniel thought that he couldn't do it now, it was up to him to approach the Budget Committee and ask for the inclusion of their demands in the Budget Report.

Dr. McDaniel: It is impossible at the present time to say just whether we are going to need any money or whether we are not going to need any. Fortunately, we were able to go through the thing without anything in the past Legislature. But in the coming Legislature we just don't know how we are going to stand.

However, I think we ought to have something available in case we need it.

Dr. Mayerberg: I would just like to correct Dr. Tarumianz on one point, Mr. Chairman. The Public Relations Committee did ask for enough money to run us for this year. We asked for $750 for publicity. As Dr. Messick told you, we paid less than $200, and that's all the money we have spent, except for stationery and envelopes.

President Fitchett: We have before us the question of whether to accept the report as is or whether it should be revised. What is your pleasure on accepting the report of Dr. Messick as is or accepting it after it has been revised by the Budget Committee after a few minutes session?

Dr. Chipman: I move that the report be recommitted.

Motion seconded and carried.

President Fitchett: Will the Budget Committee please excuse themselves with the chairmen of the three committees involved, and arrive at some figure that you can submit to the House of Delegates?

(Budget Committee, together with Drs. McDaniel, Chipman, and Mayerberg, leave the room.)

President Fitchett: We will now have the reports of Special Committees. The first is the Women's Auxiliary Committee.

### Report of the Woman's Auxiliary

In line with national policy, Delaware's Auxiliary has had a very active public relations program this year. At the request of the Medical Society we have kept files and assisted at public meetings where our Doctor-speakers have talked on government medicine. The Public Relations Committee held a very constructive program in Wilmington. This consisted of a discussion and tea held in the Academy of Medicine with a member of the Medical Society discussing socialized medicine. Invitations were sent to all organized women's groups in the city.

There has been a group, meeting weekly, for the purpose of making surgical dressings for the American Cancer Society. Another group meets regularly to sew baby garments for the Visiting Nurses' Association.

We are happy to report the establishment of a Nurse's Scholarship this year. The requirements follow:

1. Recipient must be a Delaware girl.
2. She must be accepted in a Delaware Hospital.
3. It would be desirable if she were in the upper third of her High School class.
4. She must need financial aid.
5. She will apply to the Committee, a representative of whom will talk with the girl and her family.
6. Bills will be paid directly to the Hospital.
7. In case of non-graduation, the recipient must return the amount of money used.
8. The Committee expects $300 to cover a three year period for one girl.

The Committee consists of: Mrs. S. W. Rennie, chairman, Mrs. James Beebe, Mrs. Richard Comegys, Mrs. Douglas Gay, Mrs. Roger Murray, Mrs. John Pierson, Mrs. Daniel Preston.

Sponsorship of a Drama League Play was a great financial success and made the Scholarship possible.

At the request of the Medical Society members of the Auxiliary contacted the dentists of the State, distributing literature sent by Whitaker and Baxter.

There have been several bridge-luncheons sponsored by the Ways and Means Committee and, along purely social lines, a Christmas party, spring luncheon, and Dinner Dance.

Respectfully submitted:
Marie S. Fox, *President.*

(Motion made, seconded and carried that the report be accepted.)

President Fitchett: The Committee on Cancer.

### Report of the Committee on Cancer

The committee has held no meetings during the year. This report is a review of activities in Delaware related to cancer.

During the year a cancer clinic was opened at the Delaware Hospital in Wilmington and offers advice in diagnosis and treatment of patients referred by any physician. Weekly meetings are held at which special problems are discussed and patients are presented. A complete tumor clinic, approved by the American College of Surgeons is maintained at the Memorial Hospital in Wilmington and the Beebe Hospital in Lewes maintains an approved diagnostic clinic.

The Delaware Division of the American Cancer Society at 1324 Market Street, Wilmington, continues its program of public education and service. A supply of dressings and appliances is maintained for the use of needy cancer patients and is supplemented by limited aid in paying hospital bills and the cost of medicines. A motor corps transports patients from their homes to sources of treatment. Cancer Detection Centers, open to women over 35 years of age are maintained at frequent intervals in the Wilmington hospitals and in Georgetown. Examinations are limited to the breasts, genitalia and rectum. Thirty-seven cases of cancer and a vastly greater number of other pathological conditions have been uncovered since the centers started operation two and a half years ago.

The Kent County Medical Society is sponsoring the slogan that every doctor's office is a detection center and encourages its members to make comprehensive examinations on all patients.

The Cancer Control Division of the State Board of Health has moved its headquarters from Marshallton to Dover. The staff consists of director, nurse, lay investigator, publicity director, and secretary. Its activities consist of a cancer registration service to which all cases of cancer are reportable by law. A program of professional education consists of distribution of a cancer bulletin to all physicians. A mobile unit supplements the work of the cancer society's detection centers by offering a similar type of examination to women in lower Delaware. As an aid in cancer diagnosis, bottles of fixative are available through the various health units of the Board of Health to any physician for the purpose of submitting biopsy specimens from indigent patients for pathological diagnosis. The State Board of Health defrays the cost of this service.

The need for hospital facilities for the chronically ill cancer patient has been partially met at the Governor Bacon Health Center where about a dozen such patients are accommodated.

Two research projects related to cancer are under way at the University of Delaware. The construction of an apparatus for the production and acceleration of a beam of monochromatic beta particles is in progress in the Department of Physics and has been partially financed by the American Cancer Society. The second project, financed by the Atomic Energy Commission, deals with the action of x-rays, neutrons, and nitrogen mustard on growth as indicated by corn seedlings.

Respectfully submitted:
Douglas M. Gay, *Chairman.*

Motion made, seconded and carried that the report of the Committee be accepted.

President Fitchett: Committee on Tuberculosis.

### Report of the Committee on Tuberculosis

Your Committee on Tuberculosis wishes to submit the following report for the past fiscal year from July 1, 1949 to June 30, 1950.

TUBERCULOSIS MORTALITY—DELAWARE
July 1, 1949 to June 30, 1950

| | Total | Male | Female |
|---|---|---|---|
| Total | 89 | 54 | 35 |
| White | 52 | 31 | 21 |
| Non-white | 37 | 23 | 14 |

The tuberculosis mortality rate per 100,000 population for the fiscal twelve months stated is 29.6. The population of Delaware used was 300,000.

TUBERCULOSIS MORBIDITY—DELAWARE
July 1, 1949 to June 30, 1950

| | Total | Male | Female |
|---|---|---|---|
| Total | 275 | 158 | 117 |
| White | 207 | 119 | 88 |
| Non-white | 68 | 39 | 29 |

The average daily population of Brandywine Sanatorium was 101.77. There were 113 admissions of which 64 were male and 49 were female. During this same period, there were 115 discharges of which 62 were male and 53 were female. At Edgewood Sanatorium, there were 47 admissions and 49 discharges.

Through the State Board of Health Chest Clinics, there were 4042 examinations made of which 1466 were first visits to the clinic. Of these 1466 first visits, 24 were found to have active tuberculosis; 20 had inactive tuberculosis; 14 had tuberculosis with undetermined activity which were later rechecked either by x-ray or by fluoroscopy to definitely determine activity or inactivity; and 654 were contact examinations. Tuberculin testing continues to be done in these clinics of the contacts under 14 years of age.

The Delaware Anti-Tuberculosis Society continues to cooperate with the State Board of Health in tuberculin testing, x-raying, and fluoroscoping. The Delaware Anti-Tuberculosis Society, during the past fiscal year, has x-rayed 2426 cases which include rechecks on the below Mobile Unit survey and direct referrals.

During the past calendar year, the Mobile X-ray

Unit took a total of 23,823 x-rays which include the following:

Schools
Industries
Community Surveys
Foodhandlers
National Guards
City Employees of Wilmington
Miscellaneous

The Mobile X-ray Unit also takes 14x17 flat films at the scheduled chest clinics throughout the state.

Respectfully submitted,
L. D. Phillips, *Chairman*

Motion made, seconded and carried that the report of the Committee be accepted.

President Fitchett: The Committee on Social Hygiene.

### Report of the Committee on Social Hygiene

Venereal disease control in the state of Delaware is well organized, with facilities for both diagnosis and treatment. Each county has two or more treatment centers and no district of the state is more than ten miles from such a center.

The downward trend in new cases of syphilis, which was apparent last year, has continued. There is an associated decrease in total cases under treatment. New cases of gonorrhea have not declined as much as syphilis, due to various factors including reinfection.

The recent legislation requiring a pre-marital blood test in Delaware has been profitable, bringing to light a substantial number of unknown infections.

The Committee urges all physicians to be meticulous in obtaining pre-natal serologic tests, as another means of detecting unknown infections, and by therapy, improving the chance of a normal child.

Respectfully submitted,
A. D. King, *Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Committee on Maternal and Infant Mortality.

### Report of the Committee on Maternal and Infant Mortality

A survey of the figures for 1949 in the state of Delaware show that there were a total of 7547 births, of that 6301 were white infants and 1246 colored.

In New Castle County, including Wilmington, 99.6% of the white mothers were attended by physicians and of this number 98.8% were delivered in hospitals. The colored patients were attended by physicians in 93.7% of cases and 92.7% were delivered in hospitals. The total number of births was 4882 — 4185 were white and 697 colored.

In Kent County physicians attended 96.7% of the white mothers of whom 89.8% were delivered in hospitals. The colored women were attended by physicians in 39.1% of cases and 30.2% were delivered in hospitals. The total number of births was 838; 646 were white and 192 colored.

In Sussex County physicians attended 97.8% of the white mothers of whom 84.8% were delivered in hospitals. The colored women were attended by physicians in 40.7% of cases and 24.4% were delivered in hospitals. The total number of births was 1323; 979 were white and 344 colored.

The total number of prematures recorded was 443, of these 349 were white and 94 colored. The premature birth rate averaged 55.4 for white and 75.6 for colored in the entire state.

The total number of illegitimate births recorded were 504, of which 153 were white and 351 were colored. The illegitimate birth rate was 20.5 for white and 256.8 for colored in New Castle County; 38.7 for white and 364.5 for colored in Kent County; and 23.5 for white and 290.6 for colored in Sussex County.

Blood tests were taken 96.4% of both white and colored maternity patients in New Castle County; 85.7% of white and 78.6% of colored in Kent County; and 89.4% of white and 81.1% of colored in Sussex County.

The total number of neonatal deaths for 1949 was 167. Of these in New Castle County 79 were white and 20 colored; in Kent County 10 were white and 6 colored; and in Sussex County 24 were white and 14 colored. This makes an average neonatal mortality rate of 22.1, subdivided into 20.2 for white and 32.1 for colored.

The total number of infant deaths from one month to one year was 59, of which 41 were white and 18 colored; making an average death rate of 65 for white and 14.4 for colored, or a total rate of 7.8. The actual causes of the neonatal deaths and those occurring up to one year were not determined.

The total number of still births in Delaware for 1949 was 169, of which 128 were white and 41 colored. This gives a rate of 20.3 for white and 32.9 for colored, or an average rate for the state of 22.4. In New Castle County there were 79 still births of white — an average 18.9; and 23 of colored — an average of 33.0. In Kent County there were 16 of white — an average of 24.7; and 4 in colored — an average of 20.6. In Sussex County there were 31 of white — an average of 31.6; and 14 in colored — an average of 40.7.

The maternal mortality for Delaware in 1949 totaled 5—of which 3 were white and 2 colored. This gives respectively a maternal mortality rate of .5 for white and 1.6 for colored, or an average mortality for the state of 0.7.

In New Castle County there were no maternal deaths in white women and 2 in colored. In Kent County there were 2 deaths in white women and none in colored. In Sussex County there was 1 death in a white woman and none in the colored. All of the above cases which resulted in maternal deaths were cared for in hospitals.

The causes of death in each case were listed as follows:

1. Colored (Wilmington resident)
    - Hypertensive cardio-vascular disease
    - Hepatocellular disease, nephrosis
    - Right ectopic pregnancy
    - Hemolytic transfusion reaction
2. Colored (Wilmington resident)
    - Pulmonary edema
    - Ruptured tubal pregnancy
3. White (Kent County)
    - Spontaneous abortion
    - Uterine hemorrhage
    - Intravenous pentothal anesthesia
4. White (Kent County)
    - Cardiac embolism
5. White (Sussex County)
    - Toxemia of pregnancy
    - Chronic nephritis

The Committee recommends that the Society endorse the proposed program of the State Board of Health to provide more effective immunization of the infant and child population of the state. It is understood that the program consists of advertising and encouraging parents to have their children immunized by their family physician against the diseases of diphtheria, pertussis, tetanus, and smallpox. These immunizations are recommended as soon after four months of age as possible.

It is our understanding that the pediatricians of the state have assisted in outlining the program and have given it their endorsement.

The Committee recommends that the physicians of the state cooperate fully in this venture.

Respectfully submitted,
Arnold H. Williams, *Chairman.*

Motion made, seconded and carried that the report be accepted.

PRESIDENT FITCHETT: The Committee on Mental Health.

### Report of the Committee on Mental Health

The Committee recognizes the fact that Delaware has been very fortunate in establishing adequate intra- and extra-mural psychiatric services. Beginning in 1939, the housing facilities became extremely critical. The Delaware State Hospital and Delaware Colony have been severely neglected for the past twenty years. Some of the existing buildings in these institutions are extremely obsolete and have been and still are extremely overcrowded. Each institution has included in its budget a definite building program.

Our psychiatric hospital has been approved for training purposes and for the care of patients by all national associations. There have been many criticisms in regard to the various defects of this hospital and other institutions, of which authorities have been cognizant for many years and have publicly acknowledged the defects and the reasons for such defects. The State Hospital has facilities for less than one thousand patients; yet it has an average daily population of 1350 patients. For the past twenty years the Boards of the hospitals have asked for additional funds for building programs, but there has been no favorable response from the legislature. While other state hospitals in the past few years have improved their physical standards due to the fact that millions of dollars have been appropriated by their state governments for this purpose, Delaware State Hospital has been denied the opportunity of maintaining its high standards by the legislators' refusal to consider such plans. Delaware State Hospital has included in its 1952 budget a building program of approximately three million dollars which, if completed, would maintain the high level of standards for the Hospital. In the past two years the state has appropriated $1.80 per capita per diem for the State Hospital. The authorities have requested an increase in per capita per diem in order to increase the recovery rate and decrease the number of chronically ill. They have also suggested that extra-mural work be extended to a higher level to include the care of the ambulatory, pre-psychotic group of patients. The problem of mentally defectives in the state should also be considered very seriously. It should be the aim of the state to establish a modern training school for high-grade defectives, thus organizing a method by which the children could eventually become useful, constructive citizens. The above work should be in addition to the regular care and treatment for the defectives of a lower mental level.

It is also suggested that all general hospitals plan to have a special small department for the care and treatment of mild cases of psychoneuroses before they are considered for admission to the public mental hospitals.

It is the opinion of the Committee that the Medical Society should take appropriate action in regard to the mental and physical health of the people of our state and become a positive instrument in the political arena of our state as the only competent and well-equipped group with insight and understanding of this serious problem.

Respectfully submitted,
G. W. K. FORREST, *Chairman.*

Motion made, seconded and carried that the report be accepted.

PRESIDENT FITCHETT: Dr. Messick, are you ready with your report?

DR. MESSICK: The Committee on Public Laws, the Committee on Medical Service and Public Relations, and the Grievance Board have requested allocations as follows for 1951: Dr. McDaniel, $500, for the Committee on Public Laws; Dr. Mayerberg, for the Committee on Medical Service and Public Relations, $350; Dr. Chipman, for the Grievance Board, $50.

Your Budget Committee has gone over the budget, and in order to remain within the same income we have taken $900 as follows: $50 that had been allocated as miscellaneous for the running of the office of Executive Secretary; $200 that had been allocated for the use of the officers and Council and committees; $100 allowed for travel for delegates to the AMA and other conferences; $250 allowed as miscellaneous for the running of the exhibits; $100 from the luncheon; and $200 from the dinner and reception.

The revised budget is as follows:

### Report of the Committee on Budget

### General Fund

RECEIPTS

| | | |
|---|---|---|
| *Operation* | | |
| Dues — current | | 7,100.00 |
| Exhibits | | 900.00 |
| Dinner and luncheon subscriptions | | 1,100.00 |
| Refunds from A.M.A. | | 75.00 |
| Total - X | | 9,175.00 |
| *Investments* | | |
| Dividends | | 105.00 |
| Interest | | 95.00 |
| Total - Y | | 200.00 |
| GRAND TOTAL | | 9,375.00 |
| *Disbursements* | | |
| Salaries (Part Time) (A) | | |
| Exec. Secretary | | 3,000.00 |
| Stenographer | | 480.00 |
| S. S. Tax (employer's part) | | 45.00 |
| Total (A) | | 3,525.00 |
| Office: (B) | | |
| Printing, postage, stationery & supplies | | 450.00 |
| Tel. & Telg. | | 30.00 |
| Magazines | | 20.00 |
| Total (B) | | 500.00 |
| Operation: (C) | | |
| Jour. Subs. @ $3.00 | | 825.00 |
| Committees: | | |
| Public Laws | 500.00 | |
| Med. Serv. & Pub. Rel. | 350.00 | |
| Grievance | 50.00 | 900.00 |
| Auditor | | 200.00 |
| Total (C) | | 1,925.00 |
| Travel: (D) | | |
| AMA Delegate & conferences | | 500.00 |
| Total (D) | | 500.00 |
| Exhibits: (E) | | |
| Rental | | 500.00 |
| Total (E) | | 500.00 |
| Annual Session: (F) | | |
| Stenotypist | | 400.00 |
| Programs and tickets | | 250.00 |
| Badges | | 75.00 |
| Public address system | | 75.00 |
| Lantern operator | | 75.00 |
| Luncheon | | 500.00 |
| Dinner, reception, entertainment, music and flowers | | 1,000.00 |
| Miscellaneous | | 23.00 |
| Total (F) | | 2,398.00 |

Summary:

| | |
|---|---|
| Salaries (A) | 3,525.00 |
| Office (B) | 500.00 |
| Operation (C) | 1,925.00 |
| Travel (D) | 500.000 |
| Exhibits (E) | 550.00 |
| Annual Session (F) | 2,398.00 |
| Disbursements | 9,348.00 |
| Balance (Surplus) | 27.00 |
| GRAND TOTAL | 9,375.00 |

Respectfully submitted,
J. M. Messick, *Chairman.*

President Fitchett: You have heard the report of the Budget Committee on the revised budget for the coming year. What is your pleasure?

Motion made, seconded and carried that the report of the Budget Committee, as amended, be accepted.

President Fitchett: Next is the report of the Committee on Heart Disease.

### Report of the Committee on Heart Disease

All members of this Committee have served on the Medical Advisory Board of the Delaware Heart Association and thus assisted in giving direction to the development of policies and program of this organization during the past year.

An all-day program on rheumatic fever was sponsored jointly with the Delaware Academy of Medicine on April 6th, 1950. Areas covered were, factors in the etiology of rheumatic heart disease; pathology of R.H.D., diagnosis and course of R.H.D.; prophylactic treatment; the present role of ACTH and cinchoninic acid in the treatment of rheumatic fever, and general or convalescent care of the rheumatic fever patient. The total program was planned in the interest of all who were in one way or another concerned with the medical, nursing, and hospital care of the rheumatic fever patient.

Dissemination of information regarding heart disease and rheumatic fever has been effected through the Delaware Heart Association's distribution of approved printed matter to the physicians throughout the state and upon request to the lay-public.

The approval and support of this Committee was given the Delaware Heart Association for the cooperative establishment of a convalescent care program at the Governor Bacon Health Center for child rheumatic fever patients. Thirty beds are available for these patients who cannot be cared for adequately in their homes.

Under the direction of Dr. George F. Campana, the State Board of Health has begun and is continuing a state-wide study or survey to learn the incidence of heart disease and rheumatic fever in Delaware.

Discussions with the Medical Advisory Board of the Delaware Heart Association are now in progress regarding the possibility of supplementing the already existing cardiac clinics in Delaware with a special screening clinic for congenital heart disease cases by means of angiocardiography and the newly developed tests of change of oxygen tension in the skin when 100% oxygen is breathed, to detect right to left shunts. A special screening project would involve special equipment and the bringing in of an angiocardiograph specialist to do the screening. Conferences have been held with Drs. Charles C. Wolferth and Harry F. Zinsser, Jr., at the University of Pennsylvania Hospital concerning the details and advisability of establishing such a clinic in Wilmington. The screening would determine in many instances the need for surgery without having to send the patient out of the state for such a study. It was considered particularly advisable in the instances of child patients, where sending them out of state is both emotionally and financially costly.

A program of follow-up and home service has been initiated by the Delaware Heart Association in cooperation with the heart clinics relative to rheumatic fever child patients. In many instances, transportation to and from clinics has been provided. Parents have been assisted in planning for the convalescent care period of the rheumatic fever patient in his home or at the Governor Bacon Health Center.

Respectfully submitted,
E. R. Miller, *Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Committee on Diabetes. Dr. Flinn asked me to give a verbal report in his absence.

### Report of the Committee on Diabetes

The Committee on Diabetes wishes the House of Delegates to endorse the participation in Diabetes Week in November 1950 by the State and County Medical Societies. An intensive advertising campaign will be conducted in the press and by the radio. The crux of the campaign will be the doing of urine sugars by the family doctors. The Committee would urge that insofar as is possible this be done during this campaign week, at no cost to the patient.

Motion made, seconded and carried that the report be accepted.

President Fitchett: The next report is that of the Committee on Arthritis.

### Report of the Committee on Arthritis

I am very sorry to say there have been no activities of the Committee during the year. The only one who is deeply interested in arthritis in the state and doing something about it is Dr. A. J. Heather, who has the Arthritic Clinic at the Delaware Hospital. I think it would be best to appoint him Chairman of this Committee if it is to be continued.

Respectfully submitted,
A. R. Shands, *Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next will be the Committee on Medical Service and Public Relations, Dr. Mayerberg.

### Report of the Committee on Medical Service and Public Relations

Most of the public relations projects suggested and asked for at the last regular meeting of the House of Delegates have been carried out by your committee. We have also endeavored to follow through with recommendations from the American Medical Association. In fact, we are following closely the policy laid down by the national organization.

On December 15, 1949, a public meeting was held at the Academy of Medicine in Wilmington under the auspices of this committee. The topic was "The Public Talks About Medical and Hospital Care." There were no restrictions as to what could be said and no one was told what was to be said. The only thing we asked at the time was that all courtesies be observed and that the speakers refrain from personal imputations.

The meeting was presided over by the Rt. Rev. Arthur McKinstry, Bishop of the Episcopal Diocese of Delaware, as moderator. The panel was composed of representative citizens from various walks of life: Mrs. Grace Little, Superintendent of Memorial Hospital, Hospital Administrator; Mr. Harold Maybee, Blue Cross and Blue Shield Plan; Dr. C. L. Munson, New Castle County Medical Society; Mr. George Nejmeh, C.I.O. Regional Director Textile Workers Union; Hon. Thomas Herlihy, citizen at large. Speakers from the floor were Mrs. Herbert Dobbs, representing university women; Mr. Gene Derrickson, labor; Mrs. Nellie Taylor, Vice-Principal of Howard High School; Mr. A. M. Staudt, Parent-Teachers Association; Mrs. Nellie Cussler, housewife. The speakers led off from the floor and then any one in the audience was permitted to ask questions and to speak.

Bishop McKinstry conducted the meeting in a charming and business-like manner and at times only by his wit and courage was he able to keep the meeting within bounds. As it was, the discussion finally resolved itself into a matter of racial segregation.

The meeting was recorded and the highlights from it were broadcast over WDEL and WILM on four different occasions. The press carried front page stories for two days and there were two editorials. William Frank also wrote it up in his column in the Journal Every Evening. The "P. R. Doctor" carried quite a story about it, which practically every physician in the U.S.A. received. Before we had sent the details to Chicago, your committee had a telegram from Larry Remler congratulating us and saying he had seen an account of the meeting in the Chicago press.

Your committee may find it advisable to have another such meeting down the State this year, and possibly another one in Wilmington.

We were empowered by the House of Delegates to employ a press representative and did so, but after three months we finally decided there was not enough work to justify the expense and we abandoned the idea. We had employed Miss Elizabeth Power and we hesitated a long time before letting her go, but she said that she too felt there was not enough for her to do and that she would be glad to give us her services any time we needed her. We at this time gratefully acknowledge and thank her for her kindness and fine service to us.

Our Speakers' Bureau has done a splendid job this year. There have been many talks before large and small groups by our medical and lay members. There have not been as many resolutions as we would like, but even at that we have gained many friends for the profession.

A Grievance Board composed of five past presidents of the Medical Society of Delaware has been created. Your committee met with the Board and helped them organize. Here again we received wide publicity in the press and on the radio. It was acclaimed by our editors and columnists. We received requests from a number of our states wanting to know about our plan. It represents the endeavors of this Society to see that the public interest is fairly and honestly served and to correct misunderstandings and abuses in the relationship of any patient with a member of our Medical Society.

Your committee does not propose to enter into politics, nor do we ask any member of this society to do so, but at the same time we urge each member to scrutinize all candidates for public office in this coming election. We must know a candidate's attitude toward Socialized Medicine and Socialism in any form. If he is not forthright in his statements we should vote against him and urge our families and friends to do the same, no matter what political party he belongs to or what our individual political leanings may be.

Finally, the Committee would remind the members of the recommendations adopted by this Society last year when receiving the report of the Committee on Medical Care. These recommendations are as follows:

1. That each county society promulgate a positive plan for the adequate care of indigent patients in each county. This group has been ignored by most plans dealing with medical care. It is a group whose care presumably must be met by tax-supported and/or voluntary agencies. The operation of the Maryland plan is to be investigated in this connection.
2. That physicians in each community in the state make arrangements for covering emergency cases during office hours, nights and holidays through cooperative agreements with one another.
3. That no physician leave his practice without having medical coverage for his patients while he is away.
4. That the state and county societies set up councils on health and sanitation to advise government agencies, state, county and municipal, on questions of health and sanitation.
5. That the state society appoint a committee to investigate the medical care received by the colored citizens of Delaware.

Respectfully submitted,
Emil R. Mayerberg, *Chairman.*
Lemuel C. McGee, *Co-Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next will be the report of the Committee on National Emergency Medical Service.

### Report of Committee on National Emergency Medical Service

It is the considered opinion of the members of this Committee that the General Assembly of Delaware should be requested to enact legislation authorizing the appointment of a permanent State Civil Defense Commission and a State Director of Civil Defense with power to act in an emergency.

Your Committee therefore recommends that the Medical Society of Delaware request His Excellency The Governor to initiate such legislation.

Your Committee recommends that the Medical Society of Delaware pledge to the people of our state the services and support of our members in all state and local programs for Civil Defense.

Your Committee also recommends that the State Society recommend to each of our component County Societies that they appoint a National Emergency Medical Service Committee, so that the program of the National Committee be developed and coordinated at county level.

Respectfully submitted,
V. D. Washburn, *Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Committee on Vocational Rehabilitation.

### Report of the Committee on Vocational Rehabilitation

Vocational Rehabilitation in Delaware this past fiscal year reached a new high in the number of handicapped persons given service, and in the number closed as rehabilitated into employment. When the program was initiated in 1939, during the first year of operation 16 persons were rehabilitated. This number increased to 43 the following year, and continued to increase every year thereafter, until last fiscal year when 423 persons were rehabilitated. Up to June 30, 1950, a total of 2,469 handicapped persons have been rehabilitated since the program began. At the present writing, we have close to 900 cases on our rolls, who are in various stages of the rehabilitation process.

It is interesting to note that of the 423 rehabilitations last year, 81% were unemployed when referred to this Division. The average wage *before* rehabilitation was $4.93 per week, but *after* rehabilitation services were provided the average wage increased to $37.82 per week. In one year only, without considering any salary increases, the earnings of these 423 rehabilitated persons would amount to more than $755,000. This amount does not include 39 rehabilitated family workers, farmers and others whose wages cannot be computed.

There were 47 persons receiving welfare assistance at the time of referral to this Division. They and their dependents were receiving relief aid at the rate of $625 a week, or $32,500 on an annual basis. After rehabilitation services were given, the 47 persons were placed in employment, earning on an average of $39.70 a week. The annual earnings of these 47 cases amount to $88,764, which is more than twice the amount of relief payments.

The physical restoration phase of the rehabilitation program occupies an important place in our effort to return the handicapped to employment. The funds expended for diagnosis, hospitalization, surgery and treatment, and surgical appliances exceed that spent for all other case services combined. Costs for all of these services have increased tremendously over the past few years, and the number of clients needing such services has likewise increased. Hospitalization rates, for example, have in some cases tripled over that of a few years ago, and the all-inclusive per diem rate in some hospitals still continues to increase. For cases requiring long-term hospitalization, facilities for convalescent care are required, lessening considerably the cost of the rehabilitation services, and thereby reducing the total case service expenditure in order that other disabled persons will have an opportunity to avail themselves of the services of vocational rehabilitation.

The Rehabilitation Division recognizes the cooperation given by the medical profession of Delaware, in its effort to aid the disabled in our state. We sincerely appreciate the opportunity of working with this group and trust that we can continue to function together in the common cause of restoring our handicapped citizens to self-sufficiency.

Respectfully submitted,
John G. King, *Director.*
Martin B. Pennington,
*Medical Consultant.*

President Fitchett: Next is the report of the Committee on Health and Sanitation.

## Report of the Committee on Health and Sanitation

Your Committee on Health and Sanitation reports substantial evidence of progress in the fields of public health and sanitation.

Plans have been drawn for the installation of modern sewerage facilities for the city of Wilmington and much of the northern part of rural New Castle County.

These plans also include the construction of a sewage disposal plant to serve not only the city of Wilmington, but those sections of rural New Castle County which are to have increased sewerage facilities.

Construction of these projects is expected to be started during 1951. When these projects will have been completed the health of the residents of these areas will be conserved, and the pollution of the rivers and streams will be controlled.

There is increased public interest in the control and treatment of poliomyelitis.

Additional hospital facilities in the city of Wilmington have been made available for the care of poliomyelitis patients.

Classes for the post graduate instruction and training in the care of these patients have been well attended by graduate nurses and physical therapists from all parts of Delaware.

There has been much public interest in the program of the Wilmington Department of Health to improve housing conditions and abolish slum areas in that city.

We commend and endorse the efforts of the public health authorities to strengthen and improve the over-all program for the control of pulmonary tuberculosis in Delaware.

We are of the opinion that the legislature should be urged to provide sufficient funds with which to modernize our sanatoria and to provide qualified personnel in sufficient number to properly care for Delaware's tuberculous patients, both children and adults.

We recommend that the Public Laws Committee be instructed to cooperate with the Delaware State Board of Health in attaining the objectives cited above.

Respectfully submitted,
Victor D. Washburn, *Co-Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Committee on Care of Colored People.

## Report of the Committee on Care of Colored People

The Committee on Care of Colored People regrets that it has no report to make at this time to the members of the Medical Society of Delaware.

The Committee did not know of their appointment until after the publication of the July issue of the Delaware State Medical Journal and there has been insufficient time to have meetings and gather information in regard to this subject throughout the state.

Respectfully submitted,
Samuel G. Elbert, *Chairman.*

Dr. Bird: Mr. Chairman, this makes two occasions this evening in which, apparently, criticism has been leveled at the Executive Secretary. Dr. Flinn stated in his report for the Committee on Medical Education that "someone may have told me or informed me previously; if so it made no impression." Now the doctor on the Committee on Care of Colored People says he didn't know it until The Journal for July was received.

In January, immediately upon receipt of the list of appointments for the year of the Special Committees by our late President Scull, I had directory sheets printed such as you find in your Journal six or seven times a year. Every man on that list was mailed a copy of that sheet which showed, check-marked in ink, that you are on such and such a committee; your other committee members are Doctors So and So, and the chairman is the name at the top.

I cannot be responsible for Uncle Sam delivering mail, nor can my office be responsible for a doctor opening his mail after he gets it. Nor can we be responsible for the letter making an impression. I submit that every man was notified by mail on or about January 20th, and not a single notification was returned by the post-office. I regret this sort of statement has to be made because it is not fair to the office, and not fair to the recipient, because it means that maybe he is a bit careless with his mail.

President Fitchett: I am sure we all realize that if we read the directory page of The Journal we would know that it has all been there for months. So Dr. Bird, there is no criticism of you in the least.

There being no report from the Committee on Care of Colored People, we cannot act on it.

President Fitchett: Next is the report of the Committee on Hospitals and Practice of Medicine.

### Report of the Committee on Hospitals and Practice of Medicine

No problems were brought to the attention of this Committee by any of our hospitals during the past year.

It might be stated, however, that the Hess report, dealing with the hospital practice of medicine, gave rise to the most heated debate of the Convention which was held at San Francisco June 26-30. The House of Delegates took action which technically outlawed the practice among hospitals of making a profit from the work of doctors they employ on a salary.

For a comprehensive review and summary of physicians in their relationships with hospitals, we should like to refer you to volume 143, number 12, Journal of the A. M. A., July 22, 1950, pages 1090 and 1091.

Respectfully submitted,
C. E. Wagner, *Chairman.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Grievance Board.

### Report of the Grievance Board

The first meeting of the Committee was called by the President of the Medical Society of Delaware. Drs. Emil Mayerberg and L. C. McGee of the Public Relations Committee were delegated to instruct the members selected by your President.

After instructions the following officers were nominated and elected: Dr. George W. K. Forrest, Chairman, and Dr. I. L. Chipman, Secretary. After much discussion of the functions of this Committee the following rule was adopted: That all complaints should be in writing and signed by the complainant and addressed to the Grievance Board of the Medical Society of Delaware, Wilmington, Delaware, for adjustment. Those complaints that could not be adjusted satisfactorily by the Committee should be referred to the President and Board of Directors for further study and action. Up to this date we have had a number of complaints, all of which have been adjusted satisfactorily except one. All complaints came from New Castle County and Wilmington.

Respectfully submitted,
I. L. Chipman, Sr., *Secretary.*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Delegates to the A. M. A.

### Report of the Delegate to A. M. A.

The House of Delegates convened in the Presidential Ballroom of the Hotel Statler, Washington, D. C., and was called to order at 10:05 a. m. by the Speaker, Dr. F. F. Borzell. The Chairman reported that 179 delegates had registered.

Dr. Andy Hall, Mt. Vernon, Illinois, received the General Practitioner's Award for the year.

Address of the Speaker, Dr. F. F. Borzell, stressed the continuing importance of strengthening the unity of the American Medical Association against efforts to socialize the profession, and urged county and state medical societies to work in close harmony with the national organization.

In the appointment of reference committees your delegate was appointed chairman of the committee on Rules and order of Business.

Following address of Dr. Thomas C. Routley, secretary of the Canadian Medical Association and Chairman of the Council of the World Medical Association, the Speaker reminded the House that Dr. Louis H. Bauer is secretary to that Council, with his offices in New York, and urged everyone who had not yet signed up as a member of the World Medical Association to do so.

The address of President Ernest E. Irons is printed in full in the *Journal of the A. M. A.*

The Secretary, Dr. George F. Lull, reported an increase of 5000 names on the membership roster of the American Medical Association in the preceding year and an increase of approximately 6000 names in the number of Fellows of the Association.

It was reported that the nine journals published by the American Medical Association devoted to the various specialties suffered a serious handicap during the recent strike of compositors and printers. As a result publications fell many months behind. Since that time special attention has been given to bringing these periodicals up to date and at this time all the special journals are being published currently with the month of their dating. Subscriptions have increased about 50% during the past five years.

Report of the Washington Office is printed in full in the Journal. The chief functions of this office are to screen legislative measures introduced into the Congress for their interest and relative importance to the profession and reported to the officials of the Association and to constituent societies thru the Bulletin of this office, to furnish bills, reports, public laws, government publications, etc., to members and non-members of the Association, to contact and liaison with associations and agencies to enlist and maintain their support for the Association's position on legislation and to furnish speakers for professional and lay groups and coordinate the timing and appearance of Association representatives with both Senate and House committees for hearings on medical and health legislation. Of all the legislation followed by the Washington Office during 1949 the National Health Insurance bills were of the most concern. The President's Reorganization Plan No. 1 was defeated by a vote of 60 to 32 in the Senate on August 16, 1949.

Report of the Council on Physical Medicine and Rehabilitation is printed in full in the Journal. In connection with Atomic Energy, it was reported that radioactive materials have been considered by the Council. Radon ointments have been found unacceptable and the information made available. Radium D applicators for use in eye conditions are still undergoing consideration.

One of the significant events of the past year was the adoption by the House of Delegates of a program for the advancement of medicine and public health, one section of which advocated greater emphasis on industrial medicine and on accident prevention. The Council on Industrial Health has directed its principal efforts toward a practical implementation of this broad policy. Authorization was requested and received to set up some form of regular permanent consultation with labor and management on the assumption that wider support would occur thru joint rather than single-handed effort. Detailed proposed articles of agreement following several preliminary meetings with representatives of the American Federation of Labor, the Chamber of Commerce of the United States, etc., are printed in full in the Journal.

Several recent resolutions of the House of Delegates have enunciated the great concern of the medical profession over the growing menace of accidents. These resolutions express the intention of the Association to cooperate with all agencies interested in accident control. The Secretary of the Council participated in the President's Conference on Industrial Safety in the Spring and placed on record with the Bureau of Labor Standards the Association's viewpoint. It is expected that this program, sponsored by the President thru the United States Department of Labor, will come to be an important annual function.

On recommendation of the Council on National Emergency Medical Service, the House of Delegates adopted resolutions urging that the position of the Surgeon General of the Army be elevated to a position compatible with its importance and guaranteeing direct access to the Chief of Staff. The Council reported that action was taken by the Army during the last year to effect this change.

A summary of state laws of interest to physicians enacted during 1949, prepared by the Bureau of Legal Medicine and Legislation, will be published in the near future. On socialized medicine, during the year ten states adopted either joint or simple resolutions petitioning the Congress not to enact any law which would provide for compulsory health insurance: Alabama, Arkansas, Delaware, Florida, Maryland, Michigan, Nebraska, Tennessee, Texas and Utah. Another state, Washington, by a simple House Resolution commended the President "for his courageous fight in behalf of the health of the people."

In the report of the Bureau of Health Education, it was shown that the work of the consultants in health and fitness continues to be concentrated primarily in the field of school health services, school health education and healthful school living. More and more medical societies and associations, departments of education and departments of health are displaying increased interest in school health and calling on the consultants for service in connection with the development and expansion of school health services in the various states and in local communities. The bureau is now engaged in making a survey of school health services on a nationwide basis, and an excellent return of questionnaires from nearly 1900 societies queried will make the findings and their eventual reporting of real significance.

The Board of Trustees announced that Dr. Morris Fishbein, by mutual agreement, was retired as Editor of The Journal on December 1, 1949, after 37 years of devoted service to the American Medical Association. Dr. Austin E. Smith was appointed as Editor to take the place of Dr. Fishbein.

Copy of the 1949 Campaign Report of Whitaker and Baxter in the Association's fight against nationalized medicine is printed in full in the Journal and well worth your attention.

During recent years the Council on Medical Education and Hospitals has reported frequently to the House of Delegates that a major problem in medical education today is the need for more adequate financial support of the medical schools. In the last year's report, reference was made to the Council's participation with the Association of American Medical Colleges in an effort to enlist the support of leaders in many fields for the establishment of a national organization to secure voluntary funds for the support of medical education. The feasibility of creating such an organization is being actively investigated, and in all probability the formation of such an organization will be announced soon. Several bills providing for federal funds for the support of medical education have been introduced into the 81st Congress. If the pending measure is enacted into law, the continued independence and freedom of the medical schools will depend basically on the capacity of the federal officers administering the program to recognize that the interests of the nation will be served best if a policy of cooperation and not of domination is adopted. The greatest safeguard against federal domination of medical education will be the avoidance of a situation in which the medical schools become totally dependent on the federal government for necessary funds. It is hoped, therefore, that the voluntary national organization mentioned above will become a reality. Such an organization would possess resources to which the schools could turn for aid, should federal funds ever be offered on terms that were unacceptable. If this organization is established, the Council urges that the members of the medical profession give it their strong suport both morally and financially.

The Council on Medical Service reported deep concern in connection with the emergency call problem. The National Education Campaign makes the solution to this problem doubly important, since an unfortunate circumstance in connection with one real emergency case can undo the good done by a dozen speakers or a thousand pamphlets. During the summer of 1948 the Council surveyed the situation and found only about 60 county societies with plans for handling these calls. To stimulate interest "Emergency Calls" was made a subject for discussion at two of the "Grass Roots Conferences." Then, as a follow up to assist the medical societies in developing plans, the Council published a pamphlet entitled "Planning for Emergency Medical Calls" and distributed it to each of some 2100 county societies. This pamphlet presents 16 plans now in operation as examples of how emergency calls can be handled. At present the Council is preparing a second pamphlet, designed specifically to assist the small county medical societies. At the time of this report 18 states have reported a total of 225 emergency call plans in operation. Delaware is not among them.

The report of the Committee on Blood Banks closed with the following remarks "Without undue emphasis on the danger of a forthcoming local or national emergency, your committee recommends that the American Medical Association do everything it can thru its appropriate councils or committees to cooperate fully with all other agencies . . . . which are concerned with the problem of procurement, processing and dispensing of blood . . . . A coordinated program on the national level, with complete integration of private and hospital blood banks with the Regional Red Cross Blood centers on the local level and an informed and trained medical profession will be able to meet any emergency which may arise. The American Medical Association should dedicate itself to the realization of this objective in addition to the discharge of the several other obligations it has assumed to relieve suffering and save lives among the people of the United States."

The Board of Trustees recommended, and it was moved and seconded by others that the dues for 1950 be set at $25 per member. However, there was a move for reconsideration and the report was tabled until the next meeting of the House.

Address of Mr. George Craig, National Commander of the American Legion, is printed in full in the Journal. He reiterated the fact that the American Legion and the Americal Medical Association are "on the same team," that is, against socialized medicine, compulsory health insurance and all those other matters that "puts the government into the life of the individual, removes the government from the control of the people."

Following various miscellaneous resolutions, motion of thanks to the Local Committee on Arrangements, etc., the meeting adjourned at 1:20 p. m. on December 9, 1949.

Respectfully submitted,
James Beebe, *Delegate*

### Report of the Delegate to the A. M. A.

Owing to the illness of our delegate, Dr. James Beebe, it was my privilege to serve as alternate delegate from Delaware at the meeting of the American Medical Association, which was held at San Francisco, June 26-30. It was one of the most successful meetings ever held.

The House of Delegates voted to ask each state medical board, in behalf of displaced physicians in our country, (1) to frame special regulations for them, (2) to accept International Refugee Organization certificates when other evidence of professional status is unobtainable, (3) to appoint them to state hospitals to let them learn American methods, (4) to let some of them do limited practice in shortage areas.

The formation of a student American Medical Association was authorized, the Board of Trustees to initiate the organization of such a body. This junior A. M. A. is to replace the Association of Internes and Medical Students which could not be supported because of its left-wing tendencies. Internes, it is hoped, will be offered special memberships by the medical societies in their counties.

A modified report of the Committee on Hospitals and the Practice of Medicine was adopted. It denounces systems whereby hospitals hire salaried physicians for medical care and bill the patients for this care.

Disapproval of the way certain hospitals favor specialty board diplomates was voiced by the House in no uncertain terms. It declared: "The particular specialties in which residents are being trained should be represented on the staff by well-qualified, proficient and experienced physicians, whether or not they hold membership in special societies and colleges or are certified in their specialties."

The National Education Campaign during 1951 is to be continued with the firm of Whittaker and Baxter as directors of the Campaign. It is hoped, however, that this Campaign can eventually be discontinued by expanding, the A. M. A.'s Department of Public Relations and some of the special committees of the Council on Medical Service.

The House also voted to include subscription to The Journal in membership dues and to set dues for 1951 at $25, the rate for 1950. Income of the association will thus drop; but because of a lower outlay for the National Education Campaign it is believed that it will suffice.

The 1950 interim meeting or Clinical Session will be held in Cleveland, Ohio, December 5-8.

New York City was chosen for the annual convention in 1953.

Respectfully submitted,
C. E. Wagner, *Delegate*

President Fitchett: You have heard the report. What is your pleasure?

Dr. Bird: I would like to ask a question. If this action of the AMA is carried out, it is a logical conclusion that they will take off the list of approved institutions those that employ physicians on a salary and make a profit on them. Then what is going to happen to Johns Hopkins, Mayo Clinic, and many others?

Motion made, seconded and carried that the report be accepted.

President Fitchett: The next report is that of Dr. LaMotte, the representative to the Delaware Academ yof Medicine.

### Report of the Representative to D. A. M.

During the past year there has been an increased activity of the Delaware Academy of Medicine, as shown by the addition of 11 new members, the attendance of the scientific meetings ("refresher" courses), and in the use of library.

The Academy sponsored upon request of the Wilmington Board of Health a series of four "refresher" courses as follows:

March 28, 1950, on Poliomyelitis, at the A. I. du Pont Institute.

April 6, 1950, on Rheumatic Fever, at the Academy.

May 16, 1950, on Diabetes, at the Veterans Administration Hospital.

September 19, 1950, on Pulmonary Tuberculosis, at the Delaware Hospital.

The lecturers were outstanding men in their field and all the courses were on an excellent scientific level. The courses were very favorably commented upon by the local press. They were attended not only by physicians, but also by members of the nursing profession and social workers. The average attendance at each of the courses was approximately 200 persons.

There has been a steady use of the Library by the members, as well as by the various local libraries who borrow through inter-library loan service. Several new books have been added during the year. The Library received as gifts from the Delaware Heart Association and from the Delaware State Anti-Tuberculosis Society, collections of the very latest books on heart diseases, and tuberculosis. Also several gifts of books and journals have been received from the members of the Academy. The binding program of all journals proceeded as funds permitted. Lists of new accessions of the Library are now being sent to the membership.

The building has been used during the year by the New Castle County Medical Society, Delaware State Dental Society, Delaware Pharmaceutical Society, Woman's Auxiliary of the Medical Society of Delaware, and the Delaware Heart Association.

Respectfully submitted,
W. O. LaMotte, *Representative*

Motion made, seconded and carried that the report be accepted.

President Fitchett: We have one more report, the report of the Delegate to the United States Pharmacopoeia Convention in Washington.

### Report of the Delegate to the U. S. P. Convention

As official delegate of the Medical Society of Delaware, I attended all formal sessions of the United States Pharmacopoeial Convention held in Washington, D. C., May 9 and 10, 1950. The principal items of business before the Convention were consideration of proposed changes in the constitution and bylaws and election of a General Committee of Revision. In introducing both items, it was repeatedly emphasized that the United States Pharmacopoeial Convention offers the sole instance in which Congress has delegated to a non-political body of professional men the right to establish standards which have the force of federal law. This action of Congress has not yet been challenged with success, but a successful challenge would be of serious import to all those concerned in the use of drugs; and such a challenge, in view of modern trends of thought, might only be prevented by very careful selection of officers of the Convention and of the Revision Committee.

The most important proposed changes in the constitution and bylaws reduced the number of vice-presidents to one, giving the Board of Trustees the power to fill the office of vice-president should it fall vacant between meetings of the Convention, and reduced representation of organizations and institutions taking part in the convention from three delegates to one delegate and an alternate. This did not change voting power, since the three delegates allowed by the old constitution and bylaws were only entitled to one vote between them, which vote could be split if differences of opinion arose between delegates. Such splitting of votes complicates balloting in a large convention. Other changes in the constitution and bylaws were merely matters of nomenclature or matters of simple wording.

The proposed changes were accepted by the Convention. It should be noted that they are not effective until the 1960 convention is called. All delegates to the 1950 convention retain their status until 1960, unless resignation or death should intervene, in which case, the organization or institution which they represent presumably has the right to make replacement.

In view of the importance of electing an adequately qualified General Committee of Revision, your delegate made as careful study as possible of the records of those nominated, both by review of data supplied by the Nominating Committee and by discussions with other delegates. To add some interest to an otherwise very tedious process of balloting, your delegate kept a "score" of "success" in voting as follows: medical sciences, your delegate voted in favor of 15 of the 20 elected; pharmaceutical and allied sciences, your delegate voted in favor of 25 of the 40 elected. It was the general consensus of opinion that a very good General Committee of Revision of the United States Pharmacopoeial Convention has been set up for the next ten years.

Respectfully submitted,
John H. Foulger, *Delegate*

Motion made, seconded and carried that the report be accepted.

President Fitchett: Next is the report of the Committee on Nominations.

### Report of the Committee on Nomination

Officers

Vice-President: Benjamin F. Burton, Dover.

Secretary: Andrew M. Gehret, Wilmington.

Treasurer: Joseph M. Messick, Wilmington.

Rep. to D. A. M.: W. Oscar LaMotte, Wilmington.

Standing Committees

Scientific Work: R. W. Comegys, Clayton; O. A. James, Milford; A. M. Gehret, Wilmington.

Publication: W. E. Bird, Wilmington; M. A. Tarumianz, Farnhurst; A. M. Gehret, Wilmington.

Public Laws: J. S. McDaniel, Sr., Dover; E. R. Mayerberg, Wilmington; J. W. Lynch, Seaford; J. D. Niles, Middletown; V. D. Washburn, Wilmington.

Medical Education: R. O. Y. Warren, Wilmington; J. L. Fox, Seaford; H. W. Smith, Dover.

Budget: J. M. Messick, Wilmington; Charles Levy, Wilmington; M. A. Tarumianz, Farnhurst; W. T. Chipman, Harrington; J. R. Elliott, Laurel.

State Board Medical Examiners: C. L. Munson, Wilmington; G. A. Beatty, Wilmington; M. F. Squires, Richardson Park; I. J. MacCollum, Wyoming; J. B. Waples, Georgetown; H. V'P. Wilson, Dover; E. R. Mayerberg, Wilmington. Terms expiring, 3/1/51: William Marshall, Jr., Milford; J. E. Marvil, Laurel; L. J. Jones, Wilmington.

Respectfully submitted,
Charles T. Lawrence, *Chairman*

Motion made, seconded and carried that the report be accepted.

President Fitchett: The next report is that of the Committee on Arrangements for the Convention. Dr. McDaniel, do you have a report on the committee?

Dr. McDaniel: I don't have any report. I hope everything is satisfactory. I think everything is accounted for.

I might say right here that arrangements have been made for this delegation to have something to eat right after this meeting at the Dinner Bell Inn.

President Fitchett: Are there any resolutions?

Dr. Gehret: None.

President Fitchett: Are there any communications?

Communication

Dr. Gehret: Mr. President, I have a communication here which was handed to me just before coming to Dover. It will be self-explanatory, and I believe Dr. Bird has answered the first portion of it. It is addressed to me and is dated October 1st, from L. B. Flinn. It reads:

Dear Doctor Gehret:

I am very much concerned about the lack of activity in the State Society. One of the difficulties, I am sure, is the present lack of activity of both the standing and special committees. There are a few exceptions. Part of this is due, I am convinced, to the fact that none of the officers or the executive secretary exhibit any interest in what any committee does until the week before the annual meeting when a report is requested. Many chairmen do not even know they are chairmen. I happen to know that Dr. Elbert did not know he was chairman of Committee No. 16. I did happen to know that I am chairman of the Committee on Diabetes because I was already involved in that activity.

Unless some new method of coordinating and stimulating the various committees is developed, I feel that the Medical Society of Delaware has a good chance of becoming extinct. The Committee on Tuberculosis is a farce. I have been on the Committee for a number of years, and as far as I know, the Committee has never met. Dr. Phillips, as chairman, always sends in a very concise and good report of the activities and accomplishments of the Brandywine Sanatorium and includes in this a summary of the activities of the various state tuberculosis clinics. This, in my opinion, has very little to do with the function of such a Committee of the State Society. With all the recent controversy about tuberculosis in the state of Delaware, it would seem that the State Committee on Tuberculosis should have taken a more active part.

I request that you bring this matter to the attention of the House of Delegates.

Very sincerely yours
Lewis B. Flinn

President Fitchett: You have heard the letter from Dr. Flinn. What is your pleasure?

Dr. Mayerburg: I wonder if you will entertain a motion at this time, Mr. President, on the subject of tuberculosis? For two or three years now the State Board of Health has recognized the fact that there is much to be done in the way of controlling and eradicating tuberculosis in the state. They are making tremendous efforts to improve their services. The only thing that has happened throughout the years, and I can speak as a member of the Board for eight years, has been the lack of funds. Give the State Board of Health enough money to employ a full-time Director of Tuberculosis in the state and enough to employ proper personnel in the sanitoria, and enough physicians with salary adequate to attract physicians to man our clinic, and in two or three years instead of being at the bottom of the list we will be pretty well up towards the top in tuberculosis control.

With that thought in mind, sir, I move that this House of Delegates go on record as approving the magnificent work the State Board of Health has done, and urge them to ask for sufficient funds in the coming Legislature to advance their work and assure them that every doctor in the state is in back of them in their program.

Motion seconded and carried.

President Fitchett: Are there any further comments on the letter?

Dr. Chipman: I move that Dr. Flinn's letter be accepted and filed for future reference.

Dr. Munson: Mr. President, I would like to say just a word about Dr. Flinn's letter, if I might.

Having been an officer of the organization for quite a while, I have been rather rabid about the fact that the organization was not destined to become extinct but was pretty darn near so and has been for many years. I would submit that it is not the officers of the Society who are behind the times; it is the fact that the officers who do most of the work get absolutely no support from the rank and file of the members. Any of you who have tried to contact the members of this Society and get a decent answer on any subject will agree with me.

I would submit to you that the way of making this a going Society, if we can do so, is to try and find some way of interesting the rank and file members and getting them out to meetings and getting them to pay attention to the communications that come to them from the Secretary's office, and from the other officers of the Society.

President Fitchett: Is there any further comment?

Motion made, seconded and carried that the letter of Dr. Flinn be made a matter of reference in the files.

### Miscellaneous

President Fitchett: I think we have to approve the scientific program. Will someone make a moton that the program as presented in the printed program be approved?

Motion made, seconded and carried that the scientific program be approved.

President Fitchett: Next is the selection of the meeting place for 1951.

Dr. Bird: The meeting goes to New Castle County, and Wilmington seems to be the only place big enough to handle it.

Dr. MacCollum: I move that the meeting be held in the city of Wilmington in 1951.

Motion seconded and carried.

Dr. Lawrence: Mr. President, under miscellaneous matters, Dr. Prickett of Smyrna, who is not a delegate, has a matter which he would like to call to the attention of the House of Delegates.

Motion made, seconded and carried that recognition be given to Dr. Prickett.

Dr. Prickett: Mr. President, Members of the House of Delegates: This possibly should come under communications. I was asked by the executive director of the Relief Department of the Old Age Welfare Commission to ask the President of this Society to appoint a committee to meet with him, or a committee designated by a group of welfare agencies, in an effort to set a fee for physicians who treat or examine indigent cases.

In some cases in Wilmington, or in the state, doctors will go out on indigent cases and charge no fee. In other cases a charge is made.

The director feels that he would much prefer, as is done in many other cases, that some standardized fee be set. I don't mean an exact fee, but some conclusion be arrived at whereby a physician would receive a proper fee for his services. He asks that a committee be appointed by the President to meet with a group of welfare agencies.

President Fitchett: I wonder if this shouldn't be done at the county level rather than at the state society level?

Dr. Prickett: I talked to him about that. He had the feeling that he would like it to be at the state level, because I think he had tried at the various county levels and had not been very successful, so he told me. He thought probably at the state level it might.

If the group feels that the state level would be the place to put his request, I am sure that he will be agreeable to it.

President Fitchett: What is the pleasure of the House regarding this suggestion for the formation of a committee?

Dr. Prickett: If you would like it at the county level, that would be satisfactory, I'm sure. If you would like for each county to set their own fees in regard to the treatment of indigent cases, that will be perfectly satisfactory. In that case you can turn down my suggestion and it will be brought up by the counties.

Dr. Mayerberg: Mr. Chairman, forgive me for taking the floor again. If you will read the last part of the report on Medical Service and Public Relations, you will see that one thing that we emphasized, that was passed by the House of Delegates at last year's meeting, has had nothing done about it. The Executive Secretary sent a memorandum to the president and secretary of each county society calling his attention to every one of those provisions, and nothing has been done about it.

The first and only reference that I know that has been made to it was at a county meeting about two months ago, when I got up and said the same thing urging the New Castle County Society to make some provisions for taking care of the indigent. We were talking about Blue Shield and Blue Cross for our own benefit, paying no attention to the indigent. Here Dr. Prickett comes right out and gives you a solution to this whole thing, with some state agency back of it. It is the finest opportunity in the world that I know of to get this thing started on a state-wide basis, referred to each county for cooperation.

I am in favor of it and I will introduce a motion for it. You state the motion, Doctor, and I will accept it as my own.

Dr. Prickett: The motion which I would suggest is that the President appoint a committee of 3 members of the Society to confer with agencies dealing with relief for the indigent, in an effort to establish proper fees at county levels for the examination, treatment, and care of these cases.

Dr. Mayerberg: I will accept that motion.

Dr. MacCollum: I second it.

Dr. Cannon: What agencies specifically are involved?

Dr. Prickett: I will answer that. In this particular instance it was Mr. Cooley, who is the executive director of the Relief Department of the Old Age Welfare Commission, who has to do just with relief. There are no scheduled fees whereby the unemployables, people on food orders, people on relief who need medical care, may be treated by a physician whereby that particular office might ask that some doctor treat the case and have a standard fee for the county for such treatment. Many doctors go out to treat them free; many doctors make a charge. He feels that each doctor should have the same right to a fee.

We went so far as to state that the State Board of Welfare, the Board of Dependent Children, and so forth, come under that same heading. It seems to me that the only thing that he himself can ask is for the State Relief Department of the Old Age Commission.

President Fitchett: Are you ready for the question?

Upon being put to a vote, the motion, which had previously been seconded, was carried.

President Fitchett: Is there any further business?

If not, the meeting is adjourned.

Whereupon at 10:30 P. M. the meeting of the House of Delegates was adjourned.

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## V. A. Prescriptions

Dear Doctor: For your information and compliance we quote the following telegram received today from the Veterans Administration, Washington, D. C.:

"This office has received information that some fee basis physicians are prescribing and using investigational drugs for treatment of VA out-patient beneficiaries. This practice cannot be condoned. It is requested that your office advise all fee basis physicians that investigational drugs for which new drug applications have not been made effective by food and drug administration, and therefore, not available through the regular channels of interstate commerce should not be used in authorized out-patient treatment of VA beneficiaries."

Sincerely yours,

A. C. Shannon, M. D.
*Chief Medical Officer.*

Nov. 15, 1950.

## Cerebral Palsy and the Rh Factor

Three possible ways in which to prevent new-born children from being afflicted with cerebral palsy resulting from Rh factor incompatibility are suggested in an article by a noted cerebral palsy authority in the current issue of *The Crippled Child* magazine, a publication of the National Society for Crippled Children and Adults, the Easter Seal Agency.

Dr. Meyer A. Perlstein of Chicago, a counselor for the National Society and chief of the Children's Neurology Clinic at Chicago's Cook County Hospital, believes the most effective way to prevent this crippling condition is through selective marriages of Rh negative women with Rh negative men. He points out that cerebral palsied children resulting from Rh incompatibility of the parents come only from the marriage of an Rh negative woman and an Rh positive man.

The article also outlines two other preventive methods. One is total blood transfusion for the child suffering from the effects of blood incompatibility; and the other, still in an experimental stage and unproven, is use of injections of protective substances to prevent the pregnant woman's blood antibodies from damaging the child.

The article discusses the meaning of the term Rh negative and Rh positive and tells briefly what happens when incompatibility is present. It states that only one in 25 children born to Rh negative mothers will develop the condition known as erythroblastosis fetalis, and that of those who do only one in five will develop cerebral palsy.

The author emphasizes prevention as the most important way to meet the problem of cerebral palsy from this cause. "The most effective method of preventing sequelae (consequences) is before pregnancy," he says. "To this end, if a woman is aware of her blood type and husband's blood type, she may plan accordingly with respect to child-bearing. Also it may be that by making Rh testing a premarital requirement, Rh negative girls will seek out their consorts from among Rh negative men. It might be noted here that if the present suggestion to have complete population typed because of the danger of bombing, it is very likely that the percentage of Rh babies may be lower, since there is no better medicine in prophylaxis than education."

# Editorial

### "Doctors' Lobby"

Drew Pearson, in his syndicated column, writes under the above heading in the *Wilmington Sunday Star* of December 2, 1950 as follows:

The doctors lobby, which contributed largely to the defeat of certain key senators, has become so powerful that it may overreach itself. It is now blocking a vital civil-defense measure needed to combat the atomic bomb.

How paralyzing is the fear of the doctors lobby was revealed when club women appealed to Congressman Ray Madden of Indiana to jog the public health unit bill out of the House Rules Committee.

The bill appropriates federal money to the states to organize care for civilian casualties, mobilize doctors and nurses, and teach measures against atomic, biological and chemical warfare. The money would be spent by state public health units, not by the federal government, but despite this the doctors lobby is opposed.

The bill passed the Senate last summer, but is now stymied in the House of Representatives where a delegation of women from Indiana asked Madden to help pry it loose.

However, Madden, usually a red-haired slugger for the Fair Deal, winced. "You'd better talk to the doctors," he countered.

"Do you mean the election has made so much difference that this defense bill is stuck, because the Congressmen are afraid to cross the doctors?" one of the ladies from Indiana asked.

Madden frankly admitted that was it.

"But this is needed as protection against atomic attacks," Madden was told.

"You go tell that to the doctors," replied the Congressman from Indiana. "If they're for it, it will go through. If not, I'm afraid it's sunk."

Note—One reason Congressmen are scared of the American Medical Association is the job the doctors did on Rep. Eugene O'Sullivan, Nebraska Democrat, and a booster for public medicine. The A. M. A. chapter in Omaha organized down to the precincts to register doctors, nurses and patients, propagandize them against O'Sullivan and transport them to the polls. He was defeated.

Now, as to the bill in reference to public health units, there comes immediately to mind one fundamental question: Just what is a public health unit? And immediately there comes the equally fundamental answer: Nobody knows! There are almost as many different ideas and concepts of what is, or should be a public health unit, as there are individuals working in the public health field or practitioners in contact with public health work.

Until the A. M. A. can get the proper consensus of opinion as to the *right* bill to enact, it most wisely opposes the bill at present in the Congressional hopper, which happens to be vague and indefinite, and perhaps actually inadequate, and can force public health work with civilian defense work, an entirely different proposition.

For some time past the A. M. A. has been endeavoring to get this consensus: We have seen within the past two weeks some of the correspondence between Washington and Delaware in this connection. We are confident that the A. M. A. will, in the not too distant future, come up with a proposal, that will be adequate and acceptable. In the meantime let the Pearsons and the other critics of the medical profession bide their time: Certainly, of all people, the columnists should be willing to await the facts.

And Brother Pearson, thanks for the flattering comment that we have "become so powerful." It's about time that the doctors got up on their hind legs and defended themselves!

# Editorials

**DELAWARE STATE MEDICAL JOURNAL**

*Owned and published by the Medical Society of Delaware, a scientific society, non-profit corporation. Issued about the twentieth of each month under the supervision of the Committee on Publication.*

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Articles are accepted for publication on condition that they are contributed solely to this JOURNAL. Manuscripts must be typewritten, double spaced, with wide margins, and the original copy submitted. Photographs and drawing for illustrations must be carefully marked and show clearly what is intended.

Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus, published by the American Medical Association, Chicago.

Changes in manuscript after an article has been set in type will be charged to the author. THE JOURNAL, pays only part of the cost of tables and illustrations. Unused manuscripts will not be returned unless return postage is forwarded. Reprints may be obtained at cost, provided request is made of the printers before publication.

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Subscription price: $4.00 per annum, in advance. Single copies, 50 cents. Foreign countries: $5.00 per annum.

VOL. 22 DECEMBER, 1950 No. 12

## A SIGNIFICANT EVENT

The concluding event of the National Education Conference and the House of Delegates of the American Medical Association took place in the Grand Ball Room of the Hotel Statler, Cleveland, on December 7th.

Reporting on the effects of the October National Advertising Campaign, Whitaker and Baxter stated that the American Medical Association carried their advertisement in 10,300 newspapers with a circulation of over 115,000,000, 1600 radio stations with an audience of 108,000,000, and fifty five national magazines with a circulation of over 55,000,000, making a total of more than 278,000,000 contacts, which means that most people saw or heard of this campaign two or three times. The cost of this was $1,100,000, which was borne entirely by the doctors of America through the A. M. A.

Of equal importance in winning this temporary respite in the battle against socialization of medicine, tie-in ads were inserted with the A. M. A. ads in excess of 65,000 ads, covering 1,186,000 inches of space, at a cost of $2,019,000.00. The winning of over 65,000 friends of the medical profession who were willing to spend in this campaign twice as much money as the doctors themselves spent is extremely gratifying and indicates one reason why, now that the campaign did reach down to the actual grass roots, the first round in this battle has been won.

Of even greater significance was the principal address, by William L. Hutcheson, General President of the United Brotherhood of Carpenters and Joiners of America, which has 700,000 members. Mr. Hutcheson is also Vice-President of the American Federation of Labor. His address was entitled "Socialized Medicine is No Bargain!", and was read by his assistant, Mr. Peter E. Terzick, the editor of *The Carpenter*, since Mr. Hutcheson was ill in bed on the day of this presentation. This illuminating address with its facts and figures and pungent comment will be found in full in the *Journal of the A. M. A.* for December 9, 1950, on page 1269. Every doctor will do well to read this address and note the fact that not all labor leaders are being pulled around by the nose by their national hierarchy. The more the thinking labor man learns about socialized medicine the less he likes it.

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## A. M. A. DUES

Late in November we were informed by Dr. George F. Lull, Secretary and General Manager of the American Medical Association, that members who have not paid their 1950 A. M. A. dues of $25.00 by December 31, 1950, will be considered delinquent and a letter will be sent directly to each delinquent member during the first week in January, 1951. If payment is not made within thirty days thereafter the member's name will have to be withdrawn from the AMA membership roll. As of December 1, 1950 our records indicate that only 21 members, or 6.75 per cent of the total have not paid their 1950 A.M.A. dues.

We are further informed that the A. M. A. dues for 1951 will remain at $25.00 per member and will include their *Journal of the A. M. A.*, the regular price of which is $12.00.

We are further informed that 1951 dues cannot be accepted for members who have failed to pay A. M. A. dues for 1950 until such delinquent dues have been paid. A. M. A. dues are to be paid to the local county society secretary or treasurer, then to be remitted to the state Society treasurer's office in Wilmington, with a list of payees attached. The state Society treasurer will then transmit the funds and names to the national headquarters. We have in Delaware several honorary members in the county and state society and it is not exactly clear whether they will be required to pay A. M. A. dues or not. It is presumed that those who are continuing in practice are to pay such dues, unless such payment constitutes a financial hardship. Honorary members who have retired from clinical practice are not required to pay A. M. A. dues.

### One More Milestone

With this issue your humble scribe completes his thirty-fifth year as editor of The Journal. While there have been rough and rugged moments, the task on the whole is one we have enjoyed, thanks to the help and cooperation of our members and friends. We hope this friendly attitude may continue.

The Journal extends to all our members,

friends, readers and advertisers, the

Very Best Wishes for a

*MERRY CHRISTMAS*

and a

*HAPPY NEW YEAR*

## MISCELLANEOUS

### Committee on Trauma
### American College of Surgeons

## THE CARE OF HAND INJURIES*

### V.

### Fractures and Dislocations

I Protection of the Hand (Abstract of Article I) — The first-aid care of wounds of the hand is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. The best first-aid management consists in the application of a sterile protective dressing, a firm compression bandage and immobilization by splinting in the position of function.‡ No attempt should be made to examine, cleanse or treat the wound until operating room facilities are available.

II Requirements of Early Definitive Treatment (Abstract of Article II) — Early definitive care requires thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first-aid treatment and appraisal of structural damage. For undertaking definitive treatment, the conditions required are a well-equipped operating room, good lighting, adequate instruments, sufficient assistance, complete anesthesia and a bloodless field. Treatment itself consists of aseptic cleansing of the wound, removal of devitalized tissue and foreign material (exercising strict conservation of all viable tissue), complete hemostasis, the repair of injured structures, protecting nerves, bones and tendons and providing maximum skin coverage and the application of firm protective dressing to maintain the optimum position. After-treatment consists of protection, rest and elevation during healing, and early restoration of function by directed active motion.

III Surface Injuries (Previously circulated)

IV Lacerated Wounds (Previously circulated)

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*Note: This is the fifth of a series of articles on "The Care of Hand Injuries." This material is prepared by the American Society for Surgery of the Hand and is distributed by the Committee on Trauma, American College of Surgeons, through its Regional Committees.

‡ Position of function or position of grasp: wrist hyperextended in cock-up position, fingers in mid-flexion and separated, thumb abducted, slightly forward from hand and slightly flexed.

### V Fractures and Dislocations

The purposes of treatment of closed fractures and dislocations of the bones of the hand are:

1. Protection of the injured bony structures from further displacement and avoidance of added damage to soft parts.

2. Restoration of normal relations of the bony structures.

3. Maintenance of the corrected relation of the bones to permit healing, at the same time avoiding stiffening in position of nonfunction.

4. Restoration of function. These objectives are sought in the various stages of treatment.

1. First-aid treatment. A. Avoid manipulation or attempts at reduction until skilled attention is available and accurate diagnosis has been made. B. Prompt protection of the hand by complete immobilization in the position of function pending definitive treatment.

2. Definitive treatment. When proper skill and facilities are available, this consists of: A. Diagnosis by means of 1—Inspection to determine swelling, ecchymosis, deformity, loss of function. 2—Palpation, gently employed, to discover bony irregularity, point of maximum tenderness, referred pain. This sign is of importance in discovering fractures of the long bones, particularly where deformity may not exist or is concealed by swelling. Gentle pressure in the line of axis of the long bone will result in pain at the fracture site.

3 X-ray examination. Obligatory where fracture or dislocation is suspected. Injuries in the region of the carpus require not only antero-posterior and lateral views but two or more oblique views in addition. Fractures of the carpal bones frequently fail to show in antero-posterior and lateral views.

B. Reduction. Restoration of normal position of bony structures should be secured at the earliest possible time by:

1. Manipulation. Whether reducing a fracture or a dislocation, full relaxation, preferably under general anesthesia, is desirable. Manual traction, pressure and moulding should be gentle and deliberate to avoid further soft-part injury.

When attempts at reduction by manipulation are not promptly successful undei these conditions, they should be abandoned in favor of open (operative) replacement. Dislocation at the metacarpophalangeal joint of the thumb will almost invariably require open reduction.

2. Skeletal control. To maintain reduction, particularly of oblique or comminuted fractures of phalanges or metacarpals or fractures into joints, control by skeletal fixation may be required. This may be applied by means of a length of thin Kirschner wire inserted transversely through the distal end of the fractured bone or through the terminal phalanx of the finger. The hand and injured finger or fingers should be supported in the position of function on a palmar moulded curved form or ball splint. This alone will ordinarily suffice to maintain proper position after reduction by manipulation. When control by skeletal fixation is required for maintenance of reduction, the transfixing wire may be connected to this splint on its palmar aspect or to a projecting frame, at or above wrist level, by elastic bands. Fixation or traction by means of a hole in the finger nail, or by adhesive applied to the finger, or by woven constructing device is not satisfactory. Continued straight traction on the fingers in the extended position is to be avoided.

(3) Open reduction. When manipulation fails to produce satisfactory reduction, open operative reduction is to be employed. This requires careful preliminary skin preparation and should be carried out under optimum operating conditions as described in II (Requirements of Early Definitive Treatment).

3. Maintenance of reduction. Immobilization of bony injury following reduction should: (a) Be secured with firm, even pressure bandaging, permitting no motion at site of injury. (b) Be nonconstricting, not interfering with circulation. (c) Be comfortable, causing no excess pressure. (d) Preserve, as far as possible, the position of function, taking into account the normal concavities of the palmar surface of the skeletal structure (arches of the hand) and flexor surface curves of the phalanges. (Wrist in 30° dorsiflexion, metacarpophalangeal and distal interphalangeal joints in 45° flexion and middle interphalangeal joint in 90° flexion.) Flat splinting is to be condemned. (e) Leave

free to move all joints whose motion will not jeopardize position and healing. During immobilization, action motion of all joints not necessarily confined is to be encouraged.

Immobilization may be accomplished by:

(1) Splinting or plaster casting, applied as described in 2 B Reduction. (2) Internal fixation. Kirschner wires may be employed, following either open or closed reduction, as axial intramedullary splints for individual long bones (not to protrude into a joint); as transversely introduced fixation pins passing through adjacent bones to secure the fragments of metacarpal fractures; as penetrating fixation for fragments of carpal fractures.

Wiring or plating of fractures of the bones of the hand is generally unsatisfactory.

During the early period of immobilization, elevation of the hand is desirable. Immobilization of the injury should be consistent and continuous until healing and firm union have been established.

Healing of ligamentous injuries accompanying dislocations requires two weeks of immobilization following reduction.

Healing of fractures of the long bones requires immobilization for three to five weeks.

Healing of carpal bone fractures requires twelve to fourteen weeks' immobilization. Fractures of the navicular may require four months to unite. If immobilized consistently for this length of time, most of these fractures will not require surgical intervention.

4. Restoration of function. During the healing process, all joints not necessarily immobilized should be freely moved to activate their controlling muscles and their use by the patient encouraged.

Following establishment of healing or firm union, restoration of function is secured by directed active motion, particularly through the means of exercise and occupational therapy.

## Hospital Standardization Program of the A. C. S.

So much misinformation about the Hospital Standardization Program of the American College of Surgeons has been circulated, both in the medical press and by word of mouth, that the facts of the situation should be presented to the profession.

It has been no secret that financing this program has given the Regents concern for some time. The increasing number of hospitals requesting approval and the decreasing value of the dollar have created a serious problem. However, at no time have the Regents decided to abandon the program, and never have they made any overtures to any other organization regarding its disposal.

In July of this year, the Regents received a proposal from the American Hospital Association that the latter assume and finance the Hospital Standardization Program. A Committee of the College was appointed to meet with representatives of the A. H. A. for the sole purpose of phrasing this proposal in specific terms. It cannot be emphasized too strongly that the function of, and instructions to, this committee were limited to this purpose.

The Regents considered this proposal *for the first time* on 4 August 1950. It was not accepted by the College; and the Regents immediately acted to arrange for conferences with representatives of the A. M. A., the American College of Physicians, and the A. H. A. Statements that the Regents first agreed to the proposal and later reversed this decision are wholly erroneous.

Three such conferences have been held. Divergence of points of view has diminished but no agreement has yet been reached. Hope that ultimately a satisfactory agreement can be reached has increased with each conference.

The Regents have every intention of continuing the Hospital Standardization Program, upon an expanded scale and even with deficit financing, until a solution can be found which is agreeable to the majority of the profession and which is, above all, in the best interests of the public.

## FBI Studying Records of Medical Society

The Illinois State Medical Society recently confirmed reports that its records are currently being investigated by agents of the Federal Bureau of Investigation, in a statement issued by Dr. Harold M. Camp of Monmouth, secretary of the Society.

The statement follows:

"In view of recent publicity, which was neither sought nor desired at present by the Illinois State Medical Society, the officers of the Society have requested me to confirm the report that the records of the Society are at present being investigated by agents of the Federal Bureau of Investigation.

"The investigation was begun September 13 in the secretary's office in Monmouth. Several weeks ago the Illinois State Medical Society received a request from the United States Department of Justice that the Society make its records available for inspection. The Council, governing body of the Society, considered the request and decided that the examination should be permitted, even though the members of the Council felt that such an investigation is completely unwarranted.

"Accordingly, the Council instructed me to make the Society's records available for inspection by the F. B. I. under the supervision of Mr. John W. Neal, the Society's general counsel.

"Mr. Neal advised the Federal Bureau of Investigation of the action of the Council and his letter stated in part:

" 'The Council is quite certain that the Society has violated no law and the Council members are aware that the Federal Bureau of Investigation enjoys a well deserved reputation for conducting investigations fairly and objectively.

" 'The Council has also, however, asked me to advise that it looks with extreme displeasure upon the apparent motivation of the Department of Justice in ordering the investigation. Within the last two or three years, more than 25 state and county medical societies have been similarly investigated, apparently without results.

" 'This suggests very strongly to many physicians that such investigations are instigated primarily to punish or intimidate doctors and their professional organizations for their strong and determined opposition to the national administration's compulsory sickness insurance program.

" 'The Council regrets very much that the Bureau and the Society must be so imposed upon, particularly at a time of national peril when the efforts of both organizations could be so much better directed toward the solution of pressing problems of national concern.'

"The Illinois State Medical Society is proud of its part in medicine's role in national affairs. It has nothing to fear from such an investigation. Under the circumstances, however, many of the Society's 10,000 members will doubtless find it difficult to avoid the conclusion that the investigation ordered by the Justice Department is a reprisal against them for their interest and individual activity in national political and legislative affairs."

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## BOOK REVIEW

Life Among the Doctors. By Paul DeKruiff. Pp. 470. Cloth. Price, $4.75. N. Y., Harcourt Brace and Company, 1949.

DeKruiff's new opus deals with a dozen men, chiefly in the realm of medical research, to whom he refers as "mavericks", most of whom are not too well known to the medical profession at large. As is usual in DeKruiff's writings, there is some fact and a lot of fiction, but as always he writes in an interesting style that makes an appeal to the lay reader. He still has it in for the AMA headquarters, and he gives one the impression that he considers doctors, especially specialists, more interested in the patient's money than in the patient's health.

This is the same old DeKruiff, who is now too old to change his leopard spots. Born in 1890, a Ph.D. of the University of Michigan, a former assistant professor of bacteriology, and a roving (once incorrectly(?) printed raving) editor of *Readers' Digest,* he should have by now become more sympathetic to the man who does the drudgery of clinical practice. Even so, we no not begrudge the belated glory he tries to bestow upon the laboratory workers mentioned in this book. While there is much therein that the discerning medical man will rebel against, he will find it on the whole more or less readable and not too indigestible.

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J. D. Niles, Middletown
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MRS. E. T. O'DONNELL, *Corresponding Secretary*, Wilmington
MRS. ANDREW M. GEHRET, *Recording Secretary*, Wilmington
MRS. LAWRENCE W. FITCHETT, *Treasurer*, *Milford*

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## NEW CASTLE COUNTY MEDICAL SOCIETY

*Meets Third Tuesday*

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V. D. WASHBURN, *President-elect*
J. A. GILES, *Vice-President*
J. R. DURHAM, *Secretary*
C. M. BANCROFT, *Treasurer*

*Councilors* (1952): L. C. McGee, J. C. Pierson, H. T. McGuire.

*Delegates* (1950): C. W. Bancroft, N. L. Cannon, I. L. Chipman, J. A. Giles, A. L. Heck, J. W. Hooker, C. T. Lawrence, Charles Levy, C. L. Munson, M. B. Pennington, C. E. Wagner, S. H. Stradley.

*Alternates* (1950): J. W. Barnhart, W. W. Briggs, T. J. Bulger, C. R. Donoho, S. G. Elbert, Jr., F. A. Jones, W. O. LaMotte, Jr., W. H. Lee, J. W. Maroney, F. P. Rovitti, Alex Smith, H. P. Sortman.

*Delegates* (1951): E. M. Bohan, Ira Burns, A. D. King, E. G. Laird, W. O. LaMotte, Sr., C. E. Maroney, E. R. Mayerberg, E. S. Parvis, W. M. Pierson, O. N. Stern, M. A. Tarumianz, R. O. Y. Warren.

*Alternates* (1951): S. W. Bartoshesky, J. R. Beck, A. J. Fleming, Mildred Forman, D. J. King, A. G. Lessey, W. L. McLane, R. D. Sanders, P. A. Shaw, H. H. Stroud, H. A. Tarrant, R. B. Thomas.

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Hon. Charles S. Richards, *President*; Joseph S. McDaniel, M. D., *Secretary*; Wallace M. Johnson.

## BOARD OF MEDICAL EXAMINERS

J. S. McDaniel, *President-Secretary*; Wm. Marshall, *Assistant Secretary*; W. E. Bird, J. E. Marvil, L. J. Jones.

## KENT COUNTY MEDICAL SOCIETY

*Meets First Wednesday*

H. V. P. WILSON, *President*, Dover.
W. C. PRITCHARD, *Vice-President*, Smyrna.
R. R. LAYTON, *Secretary-Treasurer*, Dover.

*Councilor*: William Marshall, Milford.

*Delegates*: I. J. MacCollum, Wyoming, and H. V. P. Wilson, Dover.

*Alternates*: J. S. McDaniel, Dover, and H. W. Smith, Harrington.

## DELAWARE ACADEMY OF MEDICINE

Open 10 A.M. to 5 P.M.

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W. M. PIERSON, M.D. *First Vice-President*.
R. R. WIER, D.D.S., *Second Vice-President*.
A. M. GEHRET, M.D., *Secretary*.
I. M. FLINN, M.D., *Treasurer*.
E. C. SYROVATKA, LL.D., *Librarian*.

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HARRY C. HELM, *First Vice-President*, Dover.
EARL HASTINGS, *Second Vice-President*, Selbyville.
WALTER E. BROWN, *Third Vice-President*, Holly Oak.
J. WALLACE WATSON, *Secretary*, Edge Moor.
ALBERT DOUGHERTY, *Treasurer*, Wilmington.

## SUSSEX COUNTY MEDICAL SOCIETY

*Meets Second Thursday*

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L. L. FITCHETT, *Vice-President*, Milford.
T. J. TOBIN, *Secretary-Treasurer*, Milton.

*Councilors*: J. W. Lynch, Seaford; A. C. Smoot, Georgetown.

*Delegates*: Bruce Barnes, Seaford; D. L. Bice, Seaford; C. M. Moyer, Laurel; G. M. Van Valkenburgh, Georgetown.

*Alternates*: W. G. Hume, Selbyville; R. L. Klingel, Rehoboth; A. C. Smoot, Georgetown; E. L. Stambaugh, Lewes.

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JOSEPH MACK, *1st V. P.*, Seaford.
J. F. MAGUIRE, *2nd V. P.*, Wilmington.
LEWIS KRESHTOOL, *Secretary*, Wilmington.
HARRY KURFIRST, *Treasurer*, Wilmington.
P. E. MUSSELMAN, *Delegate A.D.A.*, Newark.
CLYDE NELSON, *Alternate A.D.A.*, Milford.

## DELAWARE STATE BOARD OF HEALTH

J. D. Niles, M. D., *President*, Middletown; I. J. MacCollum, *Vice-President*, Wyoming; C. E. Moore, D. D. S., *Secretary*, Seaford: Bruce Barnes, M. D., Seaford; Mrs. C. M. Dillon, Wilmington; Mrs. A. Louise Cochran, Middletown, R1; Howard N. Stayton, M. D., Wilmington; Mrs. N. W. Voss, Wilmington. Floyd I. Hudson, M. D., *Executive Secretary*, Dover.

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